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DEMAND FOR PROFESSIONAL MANAGEMENT COUNSEL

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INTRODUCTION

THE development of professional management counsel into an important institution in our modern business world faces the executive with perplexing new problems in determining what use he should make of the services of this new profession.[2] The study summarized in this article is designed to aid him in dealing with these problems by making available to him the experiences of other business men with consultants.[3]

Information was obtained both from users of consulting services and from consultants themselves. The major executives of seventy-five corporations, in seven middle western cities, were interviewed personally by the author; and the information obtained was recorded in the form of individual case histories of

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[2] Following the usage of consultants themselves, "profession" is used here in discussing management counselors for lack of a more accurately descriptive term. It refers to the characteristic of temporary assistance rendered on a fee basis, but does not imply standards of admission and performance comparable with those of established professions such as medicine or law.

[3] A more complete discussion of this study is found in a monograph by the author, *The Management Counsel Profession* (Indiana University Press, 1938).

consulting engagements. In addition, information was secured from consultants themselves through personal interview, through analysis of their written reports, and through the author's own experience as a consultant. This seemed the most fruitful and practical approach to this problem because, to our knowledge, no previous investigations of this type have been made, and because the relationships under scrutiny, being personal and intimate, do not lend themselves to more refined techniques of investigation.[4]

The study was designed to answer certain questions that have significance to the executive in determining his need for consulting services. What are the principal kinds of management consultant? What types of business men use consultants' services? What conditions lead them to employ management counselors? What specific kinds of service do they purchase? How do they go about selecting the consultants they engage? What degree of success do executives report? Each of these questions is discussed separately in a subsequent section of this article.

TYPES OF CONSULTANTS

Examination of the importance of management counsel and of the kinds of operator that make up the profession is an essential phase of the executive's investigation of professional management counselors. The importance of the profession is indicated by the fact that consultants are numerous, that they are extensively used by executives of large and successful companies, and that their services frequently have profound effects upon the policies and personnel of client companies.

It is difficult to estimate the precise number of practitioners in a profession so unorganized and heterogeneous.[5] An analysis, however, of the classified telephone directories of eight leading

[4] The limitations of this methodology should, however, be kept in mind. The cases, although apparently approximately representative with respect to type of industry, and size ,financial condition, and degree of management ownership of the company, were nevertheless not numerous. The objectivity with which experiences were reported, moreover, could not be controlled. Furthermore, the analysis of these case histories exposed the findings to an additional interpretative bias on the part of the investigator.

[5] The only formal organization of the profession is the Association of Consulting Management Engineers. This association includes seventeen firms.

cities provides a rough measure of the size of this group (Table 1). It is surprisingly large, there being 795 firms listed in these cities.

Professional management consultants may be classified on several bases. One objective basis is their own method of classifying themselves. The analysis of telephone listings (Table 1) shows a

TABLE 1

LISTINGS OF CONSULTANTS IN CLASSIFIED TELEPHONE DIRECTORIES OF EIGHT MAJOR CITIES*

Title	Number Listed
Industrial engineers	111
Business counselors	76
Management engineers	43
Market analysts	30
Market research	13
Industrial consultants	9
Business surveys	5
Efficiency engineers	4
Management consultants	3
Industrial management	3
Industrial surveys	3
Industrial relations bureaus	3
Business systems	2
Subtotal number of listings	305
Consulting engineers†	523
Grand total, number of listings	828
Grand total, number of firms listed (multiple listings eliminated)	795

* New York, Chicago, Philadelphia, Boston, Cleveland, San Francisco, St. Louis, and Detroit classified telephone directories.

† Includes not only firms known to be management consultants, but also many construction engineers and others not properly members of the management counsel profession.

great diversity of titles—which are, however, more indicative of notions of effective sales promotion than descriptive of the specialty of the consultant.

A classification according to function may also be attempted. Some consultants specialize in a particular kind of management problem such as production, marketing, finance, personnel, industrial relations, records and control methods, or administrative

organization. Others restrict themselves to a particular industry or type of institution. For example, there are consultants who specialize in transportation, in banking, in merchandising, in governmental organizations, etc. Others concentrate on a particular form of consulting service, such as surveys, installation of systems, continuing advice, or temporary administration.[6] Some large firms, analogous to medical clinics, cut across these lines of specialization and have on their staff experts on various kinds of management problem.

USERS OF CONSULTING SERVICES

Three major types of institution use the consultant's services: business corporations, trade associations, and noncommercial institutions. Of these, business corporations are by far the most important type. Trade associations, although significant clients for certain kinds of consulting service, are of relatively minor importance at present. There are indications, however, that the demand for consulting services on the part of associations is likely to increase, partly as a function of the widening scope of their activities and partly because of their increased emphasis upon industry research. Noncommercial institutions make only sporadic use of consulting services, yet a few consulting firms do specialize in serving them. The absence of a profit criterion of success in the operation of such enterprises reduces the continuous pressure for efficiency. Consequently, their use of consulting services is usually limited to periods of feverish reform.

Within the corporation the groups that may engage the consultant represent several distinct interests: active managers, owners, creditors, and prospective owners. Which of these interests brings in the consultant depends upon the phase of the business cycle, the type of problem, the condition of the business, and the attitude of its management. Frequently more than one control group participates in the decision. When the management en-

[6] The type of service offered by a particular consultant is influenced materially by the genesis of his practice. Some firms began as construction engineers, utility engineers, or contractors and diverged into management work. Others started as accountants; others as managers of trade associations. There are, however, a considerable number of firms which originated as management consultants.

gages the consultant,[7] the business is usually in such a condition that assistance is sought only upon specialized management problems. When owners who are not active in the management hire an outsider, it is usually because of dissatisfaction with the state of affairs; hence such engagements are likely to be focused on an appraisal of the existing management and its policies. When it is the creditors who seek counsel, the firm is commonly in financial difficulties, and the engagement is directed toward improving financial conditions. Prospective owners usually engage consultants when the business is seeking additional financing and there is need for an appraisal of the company's profit prospects based upon its outlook, policies, personnel, and facilities.

CONDITIONS THAT LEAD TO CONSULTING ENGAGEMENTS

Since all businesses are confronted with serious management problems more or less continuously, and since consulting firms are not notably modest about their ability to solve these problems and are naturally reluctant to refuse business, the task of determining whether conditions really warrant the engagement of a consultant falls solely on the company executive. Examination of the circumstances that lead executives to seek professional counsel will enable the executive to profit vicariously from the experiences of others.

An analysis of the case histories with a view to determining the kinds of condition of the business that most frequently caused employment of consultants is summarized in Table 2. These conditions have been grouped under six major headings and are listed in the order of the frequency with which they were mentioned.[8]

[7] In general, the principal users of management consultants' services are the active managers of the business. The great majority of the profession's clients do not require a "doctor" in the sense that they are financially "sick."

[8] Certain limitations inherent in our method of investigation are particularly serious in this phase of the study. A post mortem of a partly forgotten experience produces inevitable inaccuracies in reporting. There is danger, moreover, that "good reasons" will be given, rather than real causes. Frequency of mention, furthermore, does not accurately measure true relative importance. Moreover, there is inevitable overlapping in the classifications. Finally, a clear-cut distinction was not made between symptoms or danger signals and the real causes of the company's difficulties.

Experienced and astute buyers of consulting services engaged consultants most frequently as a result of the following conditions:

TABLE 2

CONDITION OF ENTERPRISE THAT CAUSED ENGAGEMENT OF CONSULTANT*

Rank	Frequency of Mention
1. Unsatisfactory operations	40
Poor operating results of specific department or activity	15
General unprofitableness	8
Rising costs, absolutely or relative to competitors	7
Credit stringency	5
Need for retrenchment	4
Unfavorable outlook for industry or company	1
2. New problems	20
Unfamiliar difficulties due to changed operations	8
Outgrown policies, methods, and organization	6
Changed economic and legislative conditions	4
Unfamiliarity of new executive with business	2
3. Obsolescence	17
Out-of-date management methods	9
Outmoded products or technology	8
4. Executive apathy	16
Nepotism—i.e., inheritance of managerial positions	10
Neglect of executive duty	6
5. Inadequate staff	12
Incompetent personnel	6
Inadequately specialized staff	4
Defective organization of executive personnel	2
6. Conflicting interests	7
Internal strife concerning basic policies	4
Need for appraisal preliminary to security flotation	3
Total	112

* Source: case histories from field survey.

(1) unsatisfactory operation of a particular department or activity; (2) unfamiliar problems growing out of new products, new methods of distribution, or changed legislative and competitive

conditions; (3) insufficiently specialized staff to deal with problems that arise only infrequently.

Supplementing or aggravating the influence of the condition of the business, certain emotional attitudes of the executive appeared to play an important role in his decision to engage a consultant. These attitudes are listed in Table 3 in the order of their apparent importance. This list does not presume to be authoritative or complete; it is merely indicative of the kinds of mental attitudes that have a profound influence upon the demand for consulting engagements.

TABLE 3

EXECUTIVES' ATTITUDES THAT AFFECT DEMAND FOR COUNSEL

Rank	Attitude
1.	Caution—i.e., predisposition to ask advice, habit of thorough investigation before making important decisions
2.	Faith—i.e., belief in "experts"
3.	Cupidity—i.e., desire for "savings" in cost and for greater profits
4.	Imitation—i.e., tendency to be influenced by example of admired and successful business acquaintances
5.	Prestige—i.e., eagerness to be thought progressive and open-minded
6.	Uncertainty—i.e., desire for outside confirmation of policies, sometimes to anticipate criticism of directors or stockholders
7.	Impatience—i.e., annoyance at the slowness with which management problems are being solved by his own organization

KINDS OF CONSULTING SERVICES EMPLOYED

In determining the kinds of problem for which a consultant should be engaged it is pertinent for the executive to inquire into the types of service available, the kinds of service for which consultants are most frequently engaged, and the factors that affect the relative popularity of these services.

The professional services of management engineers take several forms: investigatory surveys, installations, continuing counsel, and temporary administration.

Investigatory surveys are essentially applied business research. They may involve intensive investigation of a particular policy or practice with a view to recommending improvements. Or they may take the form of a systematic and comprehensive management audit of the entire business.

Installation of improved methods frequently results from a research survey and is always preceded by at least rudimentary investigation. It involves not only the design of the new procedures, but also the establishment of the new methods through training of the clients' personnel.

Continuous counsel sometimes grows out of the two preceding types of service. Following an investigation and installation of the recommended changes, a member of the management engineering firm may be attached to the client's advisory staff for the purpose of aiding in the accomplishment of a long-run program or coping with day-to-day difficulties.

Temporary administration may not fall within a strict definition of professional management counsel. Yet the assumption of executive responsibility for the operation of a company is so intimately blended with other types of consulting work and is so commonly practiced by some consulting firms that it deserves mention as a kind of service available to harassed owners and creditors.

By analyzing the case histories from the point of view of kinds of service purchased it was discovered that of the 75 executives interviewed, the 45 who had employed outside counsel reported specifically on 106 separate engagements. The services reported and the number of engagements of each type are shown in Table 4. The relative popularity of a particular type of service does not measure its suitability for outside counsel. The dominance of production studies, for example, reflects in part the advanced state of exact knowledge in this area, and the prestige heritage of the "scientific management" movement.

SELECTION OF CONSULTANTS

Consultants differ greatly in general competence and in specialized experience and training. Consequently, the probability of

success of a consulting engagement depends to an important degree upon the skill with which the consultant is selected. In making this selection the central problem of the executive is to determine whether the man who is to handle the job has the capacity and personality effectively to advise and work with the

TABLE 4

KINDS OF CONSULTING SERVICE REPORTED BY EXECUTIVES*

Rank	Specific Services	Number of Engagements
1.	Production analyses—e.g., production control, manufacturing methods, cost reduction	29
2.	Accounting systems—e.g., inventory control, budgets, cost controls	13
3.	External market research—e.g., studies of consumer attitudes and preferences, market methods, etc.	11
4.	Internal sales survey—e.g., analyses of policies concerning product, customers, distribution channels, and promotion	10
5.	General corrective survey—e.g., diagnostic analysis of policies, personnel, organization, and facilities	8
6.	Appraisal of executive personnel	7
7.	Wage-incentive plans	7
8.	Equipment design or location—e.g., plant design, plant layout, selection of equipment	7
9.	Continuous general counsel—e.g., constant availability for informal management advice	5
10.	Executive organization—e.g., grouping, allocation, and co-ordination of executive duties	3
11.	Appraisal investigation—e.g., evaluation of profit prospects for creditors or prospective owners	3
12.	Temporary administration of enterprise†	3
	Total	106

* Source: case histories from field survey.

† It may be argued that transient administrators are not true consultants. Nevertheless, such engagements frequently grow out of consulting investigations and are difficult to separate from them.

company's organization. An analysis of the methods used by other executives in choosing consultants should throw needed light on this important problem. Certain questions are particularly significant. From what sources do executives obtain information about consultants? From whom do they seek advice? Whose advice is influential in hiring the consultant? What factors in-

fluence the executive's choice? How do they investigate consultants?

The sources from which administrators obtained information about consultants, together with the frequency with which each source was reported, are shown in Table 5. Business acquaintances are probably the most valuable source of information, because they are less biased than the consultants' own representatives and are likely to be more familiar with the management problems than bankers or trade associations.

TABLE 5

SOURCES OF INFORMATION ABOUT CONSULTANTS*

Source	Number of Cases	Percentage
Consultant's representative	28	32.2
Direct-mail literature	24	27.6
Business acquaintances of executives	18	20.7
Bankers	5	5.7
Auditors	4	4.6
Trade associations	4	4.6
Articles and books	2	2.3
Speeches	2	2.3
Total	87	100.0

* Source: case histories from field survey.

The persons whose advice was sought concerning the desirability of using professional management counsel are indicated by the analysis in Table 6. The large percentage of cases in which no one was consulted is significant. The most reliable advice seemed to come from business acquaintances who had used consultants.

The persons reported as most influential in engaging the particular consultant are indicated in Table 7. Here again the recommendation of business acquaintances was important. Those who have had experience with consultants are likely to be a particularly reliable source of influence. Bankers, auditors, and trade associations are likely to be impartial, but frequently lack detailed knowledge of the management's needs.

The factors that affected the selection of the consultant are

grouped in six classes and arranged in the order of their frequency of mention in Table 8. Experienced users of consulting services stressed: success in serving former clients, apparent ability of job supervisor, apparent caliber of consultant's executives, soundness

TABLE 6

PERSONS CONSULTED IN INVESTIGATING MANAGEMENT ENGINEERS*

Person Consulted	Number of Cases	Percentage
No one	17	41.4
Business acquaintances	12	29.2
Auditors	5	12.2
Bankers	4	9.8
Trade associations	3	7.4
Total	41	100.0

* Source: case histories from field survey.

TABLE 7

PERSONS INFLUENTIAL IN ENGAGING CONSULTANTS*

Sources of Influence	Number of Cases	Percentage
Consultant's representative	32	47.8
Business acquaintances	18	26.9
Bankers	9	13.4
Auditors	5	7.4
Trade associations	3	4.5
Total	67	100.0

* Source: case histories from field survey.

of method of approach, and experience with the same type of problem. Less weight was given to the general reputation of the consulting firm than to the competence and personality of the individual who was to handle the particular job.

Typically, the investigation that precedes a consulting engagement is inadequate and almost perfunctory. This is attributable partly to failure to appreciate the need for care in making a selec-

tion and partly to the difficulty of obtaining unbiased information about consultants. Executives experienced with consultants, however, usually attempted a thorough investigation, by conferring

TABLE 8

FACTORS AFFECTING SELECTION OF CONSULTANTS*

Rank	Selection Factor	Frequency of Mention	Percentage
1.....	Experience	52	32.9
	With same type of problem in a variety of industries	18	11.0
	With client's industry	14	9.0
	With general consulting work	9	5.8
	With client's own business	6	3.9
	With closely allied industries	5	3.2
2.....	Success	39	25.1
	Success in serving former clients	27	17.4
	Reputation for high quality of service	12	7.7
3.....	Caliber of staff	21	13.6
	Apparent ability of job supervisor	13	8.4
	Apparent ability of consultant's executives	8	5.2
4.....	Sales effectiveness	20	12.9
	Impressive personality of consultant's representatives	15	9.7
	Moderation of promises of results	5	3.2
5.....	Operating methods	12	7.8
	Soundness of method of approach	6	3.9
	Co-operation with client's organization	4	2.6
	Quality of reports written for other clients	2	1.3
6.....	Prestige	11	7.1
	Standing with bankers	4	2.6
	Illustriousness of former clients	4	2.6
	Prestige of university connection	3	1.9

* Source: case histories from field survey.

with executives for whom the firm or the individual staff man had worked and by talking at some length with the individual who was to do the work in order to appraise the temper of his mind, the soundness of his judgment, and the suitableness of his personality.

DEGREE OF SUCCESS

What success have business men had with consultants? It is difficult to measure "success," because any criteria reflect many other variables in addition to the effectiveness of the consultant's work. The following indices have been employed in this study: (1) the opinion of the executive; (2) the willingness of the executive to use consultants again; (3) the actual record of repeat engagements.

TABLE 9

SUCCESS RANKING OF CONSULTING SERVICES

Success Rank*	Consulting Service
1.	Continuous general management counsel
2.	Appraisal of executive personnel
3.	Installation of accounting systems
4.	External market research
5.	Wage-incentive plans
6.	Production analyses
7.	General appraisal surveys
8.	Equipment design or location
9.	Internal sales surveys
10.	General corrective surveys
11.	Executive organization studies

* Ordered according to percentage reported successful in field survey.

Executive opinion constitutes a rough measure of success.[9] Of the 45 firms that reported the use of consultants, 25 regarded them as successful, 8 as of doubtful value, and 12 as failures. The separate analysis of the success of each individual job indicates an average success ratio of about 70 per cent. Specific types of engagement are listed in Table 9 in the order of their reported success.[10]

A second measure of success, the expressed willingness to use consultants again, reflects not only the results of a previous

[9] The opinion of the executive may be a defective index, because it is affected by the effects of a given engagement on his own career, and because the results of consulting work are sometimes subtle, indirect, and slow to come to his notice.

[10] Percentage figures, which ranged from 100 to 33, are not cited. They are not statistically significant, because of the few cases and the importance of factors other than the type of engagement. The general ranking may, however, be interesting.

engagement but also the general predisposition of the executive to seek advice. This index corroborates, in general, the success-ratio of the preceding measure. Of the 45 companies that had used outsiders, 24 indicated a willingness to try them again, 10 were doubtful, and 11 were not planning subsequent engagements.

A third measure is the actual record of repeat engagements.[11] The 45 companies that had used consultants reported 106 separate engagements, which was probably not complete. This shows that on the average companies reported more than two engagements each. This average seems fairly representative, since almost half of the 45 firms reported more than one use of the consultant.

CONCLUSIONS

The general conclusions of this study may be briefly summarized as follows:

1. Professional management counsel has become an important business institution, as is attested by its extensive use by executives, and the far-reaching effects of its services upon corporation policies.

2. Its widespread use, together with its potentialities for helpfulness, is leading thoughtful executives to investigate the services of this profession more seriously.

3. The most important users of consulting services are business corporations. Within the corporation several alternative control groups may be instrumental in hiring the consultant: active managers, creditors, owners, and prospective owners.

4. Circumstances that cause executives to engage management consultants are various. Not only are unsatisfactory conditions of the business of importance, the emotional attitudes of executives also play a significant role.

5. The kinds of management problem for which consultants are most commonly engaged are, in the order of their apparent frequency: (1) production problems, (2) marketing problems, (3) accounting problems, (4) personnel problems.

[11] This index is also imperfect because it reflects executives' general attitudes, and because the action of an administration that came into power since the first engagement does not fully reflect the success of that study.

6. Since consultants differ greatly in ability, care should be exercised in their selection. Business acquaintances who have had experience with management engineers appear, in general, to be the most important and reliable source of information and advice. In investigating a consultant great importance should be attached to his success in serving former clients and to the ability of the person who is to supervise the engagement, with particular attention to his mental caliber, practical judgment, and ability to handle the client's personnel.

7. The degree of success of consulting engagements is mixed and is difficult to measure precisely. In general, about twice as many successes as clear failures are reported, but a large proportion of the cases remain in the "doubtful" category. Certain types of engagement appear to have a higher success ratio than others.

In general, management consultants, by placing a staff of highly specialized experts at the disposal of corporation executives, on a professional basis, appear to be contributing importantly toward increasing the effectiveness of business administration.

STUDY OF A GROUP OF AMERICAN MANAGEMENT-INVESTMENT COMPANIES, 1930–36[1]

EDWARD D. ALLEN[2]

IN A little more than fifteen years, 1,500,000 Americans have become participants in investment-trust companies.[3] From 1920 through 1935, investment trusts of all types absorbed a net amount of about $5,300,000,000 in capital funds[4] from the American public, of which about $3,000,000,000 remained in net assets at the end of 1936, scattered among approximately 600 units. Despite the large losses suffered by the institution as a whole during the 1929–33 depression, many units which survived the debacle are apparently to become permanent additions to our investment structure. This is particularly true of the most important segment of the institution—the general management company.[5] It is the purpose of this article to analyze the operat-

[1] The complete study from which this article was taken was made possible by a grant from the Works Progress Administration, Official Project No. 165–71–6999, Minnesota Project No. 5–353–10,842.

[2] The author is assistant professor of economics in Iowa State College.

[3] The institution has been known interchangeably as "investment trust," "investment company," and "investment-trust company." Practically all the management-type units have been organized as corporations and are not trusts in the eyes of the law. Throughout this article these units are, therefore, referred to as "investment companies."

[4] The statistics in this paragraph are based on those contained in the report entitled "Progress of the Study of Investment Trusts and Investment Companies," issued by the Securities and Exchange Commission in January, 1937. Revised figures issued late in June, 1938, indicate that these earlier figures somewhat underestimated the size of the institution as a whole.

[5] General management-investment companies typically sell their own securities to the public, invest the proceeds in a diversified list of securities of other corporations, and purchase securities for purposes of investment rather than for control. As a rule, investment in a changing list of securities is their exclusive occupation, and in their choice of securities they are limited to no one type. One or more of these facts distinguishes them from holding companies, insurance companies, and saving banks. Borderline types of companies have developed in the past, however, which combine certain features of the holding company and investment company.

ing record and portfolio policies of approximately 60 of these management companies during the period 1930–36 and to indicate whether this representative group or particular units within it have justified their existence as a part of our investment structure. Some mention will also be made of recent lines of development in the investment-company movement.

If space permitted, a history of the whole investment-company institution during the period 1930–36 would be of interest. Since this is not possible, only the broad picture can be drawn, and the logic of the type of study already outlined indicated. From the figures given above, it is apparent that statistically the period was one of tremendous losses to holders of investment-trust securities. In terms of the number and kinds of units, the period was one of liquidation and merger for management companies in existence at the end of 1929, of the rise and decline of the so-called fixed trust,[6] of the rise of several large management units on the wreck of the old, and of the increasing popularity of the mutual-type company.[7]

By way of partial illustration, it may be pointed out that from 1930 to 1934, nearly 200 of the 540 management-company units of all types in existence at the end of 1929 had disappeared through merger, voluntary dissolution, or failure. Included in this group were such 1929 favorites as Goldman Sachs Trading Corporation, Shenandoah Corporation, and United Founders, giants whose assets shrank by a hundred million dollars or more during the 1930–32 liquidation. Also included in this group were many small companies whose weaknesses were high-operating expenses and inferior management. Finally, the group embraced a considerable number of units having paid-in capital of from $5,000,000 to $40,000,000, whose sponsors, banking or brokerage houses, found themselves ill-fitted for investment management in time of stress. All these groups, but particularly the first and third, provided the aggressive managements of the Atlas and Equity

[6] For a comprehensive study of the fixed trust see Marshall D. Ketchum, *The Fixed Investment Trust* ("Studies in Business Administration" [University of Chicago, 1937], Vol. VII, No. 3).

[7] This type is defined and discussed later in the article.

Corporations with an opportunity for rapid growth through merger and/or stock control during this period.[8]

All through 1930–36, however, a large group of management companies, organized for the most part after 1925, continued to operate under much the same managements. Both because their comparative records and policies are available for study over one complete cycle of business and security prices, and because today they form the backbone of the continuing investment-company institution, it seemed desirable to concentrate on this group. That the group constitutes a fairly representative sample of the general management field may be seen from the classification given in Table 1.[9]

"Pure" investment companies, of which this group may be said to represent the American adaptation of the older British institution, appeal to investors with the argument that through their purchase of investment-trust securities they can obtain the double advantage of diversification and continuing management of investment specialists. These advantages, it is argued, will secure for investors greater security of capital and a higher-income return than they could obtain for themselves investing independently. Since American investment companies, both in the late twenties and since, have been primarily common-stock pools,[10] it may be stated with considerable accuracy that the American investment-trust formula has been "managed diversification in common stocks." How successful this formula in its various adaptations has been will now be investigated. It is proposed first of all to examine the record of these companies with respect to capital preservation, then to study their record of income and operating expenses, and finally to evaluate this record in terms of their portfolio policies.

In studying the record of capital preservation, the writer made comparisons between individual companies within the invest-

[8] As a result of these activities, Atlas and Equity are among the largest investment companies today.

[9] See Appen. I for a complete list of these 58 companies.

[10] Figures on the breakdown of investment-company portfolios are given later in the article.

ment-company field, and between investment companies on the one hand and various indexes of comparison on the other taken to represent various types of investment policy which hypotheti-

TABLE 1

CLASSIFICATION OF 58 MANAGEMENT INVESTMENT COMPANIES,* YEAR-END, 1929

A. Classified as to Size

Net Assets (000 Omitted)	No. of Companies
$75,000–$100,000	4
50,000– 75,000	4
25,000– 50,000	5
15,000– 25,000	6
10,000– 15,000	12
5,000– 10,000	13
1,000– 5,000	12
Less than 1,000	2
Total	58

B. Classified as to Capital Structure

Type of Capital Structure	No. of Companies
Bonds, preferred stock, common stock	13
Bonds and common stock	5
First & second preferred, common stock	5
One preferred & common stock	14
Common stock only	
a) A & B stock 2	
b) One class 15	17
Common stock only, "Mutual Type"	4
Total	58

* While this group of 58 companies formed the basis for the general study, there are portions of the study which deal with a smaller group contained within the entire group. This was made necessary either because of time limitations or because of the noncomparability of data over the entire period 1930–36.

cal "average" investors might have followed during the period. Finally, the record of American companies was compared with that of a group of British companies over the same period. The types of investment policy assumed for purposes of comparison with the record of investment companies were as follows: (1) investment entirely in high-grade bonds throughout the period,

using Standard Statistics 60-Bond Average, (2) investment entirely in common stocks throughout the period, using Standard's 90-Stock Average, (3) investment in 50 per cent bonds and 50 per cent stocks throughout the period.[11] The value index used for investment companies was that of change in adjusted net assets at the market.[12] The relevant statistical comparisons are given in Table 2.

Certain conclusions seem evident from a study of Tables 2 and 3. First of all, there was tremendous variation in the records of different investment companies over the period, but a strong enough central tendency in their performance existed to warrant conclusions applicable to the group as a whole. Second, when judged on the basis of capital preservation in relation to the record of other possible indices of comparison embracing alternative types of investment policy, American investment companies as a group cannot be said to have made even an "average" record over the period. Investing predominantly but not entirely in common stocks, their record was somewhat better than that of the 90-Stock Average during the 1930–32 deflation, but likewise somewhat worse than that of the stock average during the 1933–36 recovery.[13] Over the entire period 1930–36, their composite

[11] A further comparison was made between a hypothetical investor who held bonds, stocks, and cash in the same changing proportions from year-end to year-end as did a small group of investment companies, but who purchased for his specific holdings securities included in Standard Statistics' indices. The results were slightly unfavorable to investment companies, but certain methods necessary to the comparison made the use of these figures inadvisable.

[12] For any given year or period, net assets at the beginning of the period were adjusted for new capital received or for cost of capital retired. In addition, when comparing investment companies with each other, all dividends and bond interest paid out were added back. The foregoing methods yield fairly accurate results when used for short periods, but the figures for each period must be obtained directly from original figures. Thus, the fact that many companies were retiring capital through 1930–32 and 1933–36 made it impossible to get the correct percentage change for 1930–36 by combining the 1930–32 and 1933–36 percentages. The 1930–36 figure was obtained directly for the whole period.

[13] Assuming average ability in the selection of particular stocks from time to time, this comparative record during 1930–32 and 1933–36 would naturally follow, since cash resources do not change in value at all, and other types of securities fluctuated less than common stocks.

record did not quite equal that of the stock average and was decidedly inferior to that of bonds or of a bond-stock composite. Their record, moreover, was inferior to that of the older British companies over the same period.

TABLE 2

VALUE CHANGE IN ADJUSTED NET ASSETS OF INVESTMENT COMPANIES COMPARED WITH THAT OF OTHER INDEXES, PERIOD 1930–36

TYPE OF INDEX	PERCENTAGE OF CHANGE IN VALUE FOR STATED PERIOD		
	1930–32	1933–36	1930–36
53 Management companies	−61.3*	+125.5*	−21.7*
90-Stock Average	67.9	152.5	−20.4
60-Bond Average	30.6	46.4	+ 1.5
Bond-stock composite	49.3	99.5	− 9.5
	1930–32	1933–35	1930–35
40 British companies†	18.5	44.3	+13.0
53 American companies	−52.4	+86.4	−22.2
	Period 1930–36		
Number of companies out of 57 whose record was superior to that of			
a) 60-Bond Index	9		
b) 90-Stock Index	22		
c) Composite bond-stock	15		

* These percentage changes are based on changes in the combined assets of all 53 companies, adjusted for capital changes only.

† The figures for British companies are taken from a study by Stayman L. Reed called "British Investment Trusts," made for a group of American investment companies in 1936 and, to the writers' knowledge, published only in mimeographed form. Figures for both British and American companies are based on fully adjusted net assets, e.g., net assets adjusted for both capital changes and for dividends and bond interest paid out.

Third, a group of companies roughly equal to the first 25–30 per cent of the entire group made a record which compares favorably with two or more of the foregoing indices and from the standpoint of capital preservation may be said to have demonstrated some justification for their existence.

It may be argued, of course, that the period 1930–36 does not provide a fair or sufficient basis for the second conclusion given

above. American investment companies were not in a fortunate position when the 1929–33 depression broke, accompanied by deflation in the security markets. In the first place, most of the companies were formed in the late twenties and were committed largely to common stocks purchased for the most part at prices out of all normal relation to earnings, a fact which placed their portfolios in a vulnerable position when the break came. In the second place, it is probably impossible to expect any new invest-

TABLE 3

RELATIVE NET-ASSET PRESERVATION RECORDS OF 57 INVESTMENT COMPANIES, 1930–36

Percentage Change in Adjusted Net Assets	No. of Companies in Each Group
+70–	1
60–	2
50–	2
40–	3
30–	2
20–	6
10–	7
– 0–	9
10–	9
20–	6
30–	6
40–	2
50–	1
60–	1
Total	57

ment institution to develop a high quality of investment management except over a considerable period of time. Yet the fact remains that if we compare the record of investment companies with that of the price movement of various other indices over the succeeding seven years, that record *was* inferior.[14] Further, even a group of the oldest companies formed prior to the sharp advance

[14] The fact that adjusted net assets of investment companies dropped less than the stock average during 1930–32 and rose less than the stock average during 1933–36 reflects mainly the fact that in both periods a portion of their assets were in cash and in other types of slower moving securities.

in stock prices during 1927–29 do not show a satisfactory ten-year record. Out of nineteen, only six were able to show net assets at the end of 1936 which equaled their paid-in capital.[15]

It is not contended here that losses could have been avoided entirely during 1930–32. Certainly extreme losses—such as declines in net assets approximate to or worse than that of the stock averages for companies having a portion of their assets in senior securities and cash—were inexcusable. On the other hand, to have completely maintained their capital funds investment companies would have been compelled to place the bulk of their assets in cash and short-term government securities and to have taken a short position in the stock market. Such foresight would have been almost superhuman.[16] Companies with fixed-interest charges and preferred-dividend requirements to meet can hardly be criticized for trying to earn at least a portion of such requirements from investment holdings. It should be noted, too, that had investment companies held nothing but high-grade bonds, their portfolios would have shrunk in value by approximately 30.6 per cent during 1930–32. Nevertheless, the extent of the losses for the group as a whole reflected anything but the "expert management" which was presumed to obtain for an individual investor better results than he could obtain for himself. Over the period 1930–36, however, the record of a small group of companies whose records bettered both the stock average, stock-bond composite, and in some instances the bond average (while they were investing primarily in common stocks) is worthy of note. This group included such well-known companies as State Street Investment Corporation, Lehman Corporation, General American Investors, National Bond and Share, Fourth National Investors,[17] U.S. and Foreign Securities, and Tri-Continental Corporation.

The success of investment companies over a period of years is to be judged not only by their record of asset preservation but

[15] Adjusted for capital subsequently repurchased or new capital issued.

[16] From the social viewpoint, moreover, such widespread dumping of securities might have been undesirable, as deflation might have been even further accentuated.

[17] Second, Third, and Fourth National Investors were merged with their parent company, National Investors, early in 1937, to form one large mutual fund.

also by their record of net income produced for their security-holders. In this country investment companies have in different periods regarded income as (1) a flow of value from capital investment plus gains (or minus losses) on the sale of capital assets and (2) as a flow of value from capital investment, excluding all capital gains or losses. As a group during the twenties they held the former concept, less on theoretical grounds than because it permitted them to show "fat" income accounts which pleased their shareholders. Under pressure of severe losses during 1930–32, most of them took the item of security profits and losses out of the income account, again not so much for theoretical reasons as because the huge realized losses were forcing them to show persistent losses in the income account. Thus for accounting purposes at least, most American investment companies came around to the British concept of income by the end of 1932. Broadly, it is this concept which is employed in this article. Income is here taken to mean the substantially recurring items of receipt which result from the regular investment, service, and underwriting activities of investment companies. Concretely, it includes interest on bonds held, cash dividends on stocks held, fees for supplying investment advice to other companies, and underwriting commissions. It excludes stock dividends on stocks held, profits (or losses) on the sale of securities,[18] and profits (or losses) on syndicate participations for speculation in securities. The relevant figures for gross income, net income, and operating expenses are given in Table 4.

These figures indicate (1) that practically all the income of investment companies is derived from their holdings of stocks and bonds, with the ratio of dividends to total income increasing sharply toward the end of the period and, more important, that (2) the record of net income produced by investment companies for their security-holders from 1930 to 1936 was, like their record of capital preservation, inferior. Precisely how inferior this record of net income produced was, is difficult of measurement, since ready indices of comparison are not available. It may be noted,

[18] The effect of such profits or losses is, of course, taken into consideration through changes in adjusted net assets at the market from year to year.

however, that an individual who held the bonds included in Standard Statistics 60-Bond Index from the end of 1929 to the end of 1936 would have received an annual yield on his original investment which at no time during the period fell below 4 per cent on his original investment, whereas the net return for investment companies was at no time as high as this. Again, net income was far below the 5–6 per cent interest and dividend rate borne by most of the senior securities issued by over half these companies, so that the income record was certainly far inferior to the expectations of the companies themselves at their inception.[19]

TABLE 4

INCOME AND EXPENSE RATIOS FOR INVESTMENT COMPANIES AS A GROUP

Classification	Year						
	1930	1931	1932	1933	1934	1935	1936
I. Ratio of following items to average invested capital*							
Gross income	4.46	3.48	2.40	1.81	1.89	2.00	3.06
Expenses—taxes	0.60	0.47	0.38	0.38	0.36	0.39	0.51
Net Before Bond Interest	3.86	3.01	2.02	1.43	1.53	1.61	2.55
II. Ratio of following to total income (per cent)							
Dividends and interest	95.4	98.1	97.6	97.0	98.2	97.9	94.6
Dividends	75.3	78.7	73.0	72.4	76.1	81.9	92.4
III. Ratio of following to gross income (per cent)							
Expenses	12.0	13.2	15.4	19.8	18.4	17.6	14.8
Expenses—taxes	13.5	14.0	16.0	21.3	19.2	19.5	16.8
IV. Ratio of following to average net assets (per cent)							
Expenses	0.62	0.80	0.95	0.82	0.68	0.67	0.67
Expenses—taxes	0.70	0.84	1.00	1.00	0.86	0.76	0.76

* There are many difficulties involved in obtaining a satisfactory base figure for invested capital to which income and expense figures can be related. Without the explanation given in the complete study from which this article is taken, it must suffice here to state that invested capital as used here refers to average paid-in capital and surplus adjusted each year for capital retired or new capital issued.

[19] It follows that original purchasers of common stocks in companies which issued senior securities have generally been injured rather than benefited by the "trading

The writer believes it fairly clear that during the period 1930–36 investment companies as a group failed to achieve either of the basic aims which such companies are presumed to have, namely, a greater security of capital and a higher-than-average income return than the holders of their securities could obtain for themselves without the aid of investment companies.

Reasons for the poor record with respect to income are not hard to find. First of all, those companies which remained almost fully invested in common stocks throughout the period were hard hit by a drastic falling-off in the flow of corporate dividends during 1931–33. Second, many companies preferred to conserve their assets during 1930–32 by shifting sharply into cash and low income-yielding government securities and then shifting back into common stocks, which were expected to show the most rapid recovery whether dividend-paying or not. Since the figures for gross income reflect both these types of policy, they are very low after the year 1930. Finally, gross income was itself sharply reduced by operating expenses which, though themselves considerably reduced in actual amount during the period, were still above the predepression ratios of expenses to either gross income or net assets at the end of 1936.

That expense-tax ratios have been excessively high for investment companies as a group is indicated by the inferior record which these companies have made over the period. That they are still excessive is indicated by several facts. First, investment-company shares continue to sell on the market at prices below liquidating values, evidence that investors feel that operating results after expenses have not been as satisfactory as returns from direct investment in common stocks. Second, expense ratios are considerably higher than British companies show, although the record of these companies is much better than that of American companies over the same period. Thus, at the end of 1935, total expenses of British companies represented 41/100 per cent of

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on the equity" in which their companies engaged at their inception or thereafter. The importance of this fact is lessened, however, when it is remembered that many of these common stocks were purchased originally by the sponsors of these companies and not by outside investors.

1 per cent of net assets and less than 9 per cent of net income. As of the same date, comparable figures for American companies were 75/100 of 1 per cent and 20 per cent, respectively.

The possibilities of further reductions in operating expenses seem slight. In considerable part such expenses rest on items which are largely fixed beyond control of the management, such as legal and auditing fees, rent, supplies, transfer agent, and registrar fees, to say nothing of taxes, the number and burden of which has been increasing.[20] In part, expenses rest on lucrative management contracts, large salaries to officers, and other managerial items. Assuming continuance of present managements, further reduction here seems unlikely too. The chief hope for reduction in operating-expense ratios is that present managements will be able to make a better operating record in the future than they have in the past. Another possibility is that one company will supply investment advice to a considerable group of others which may or may not also be under its control.[21] In general, the prospects are that expense-tax ratios will continue at about their present levels.

So far in this article, the operating record of investment companies has been examined, but practically nothing has been said as to explanation of that record. In attempting this explanation, we are led, of course, to a study of the portfolio policies of these companies. The first thing that is clear is that *managed diversification in common stocks* remained the basic portfolio policy for most companies through the period. This is shown in part by the figure

[20] Thus, the Lehman Corporation paid ten different kinds of taxes during 1936. These included: (*a*) Delaware franchise tax, (*b*) New York City excise tax, (*c*) New York State franchise tax, (*d*) federal normal income tax, (*e*) federal capital stock tax, (*f*) federal excess profits tax, (*g*) federal surtax on undistributed profits, (*h*) federal social security taxes, (*i*) New York State unemployment insurance tax, (*j*) transfer tax on the sale of securities. In addition, it may be noted that not all taxes paid are reflected in the operating expense-tax figures given in Table 4, since the writer made an effort to allocate to profits on the sale of securities the portion of federal income tax due to such profits. This was necessary in view of the fact that since such profits were not called "income," taxes applicable to such profits could not logically be charged against income.

[21] Service of the Tri-Continental Corporation to its affiliated units is a case in point.

given in Table 5, but it is inadequately shown, since common stocks declined in price relatively more than other types of securities in 1930–32. If the figures below are adjusted for this relative price change, it develops that relative holdings of common stocks actually increased throughout the period. The rate of increase in these holdings, however, did not take a big jump until the coming of recovery in 1933, since which time common stocks have consistently amounted to about 80 per cent of the market value of the assets.

TABLE 5

PERCENTAGE CLASSIFICATION OF MARKET VALUE OF ASSETS OF 23 INVESTMENT COMPANIES, PERIOD 1930–35

TYPE OF SECURITY	YEAR-END						
	1929	1930	1931	1932	1933	1934	1935*
Bonds	4.4	5.4	7.5	10.3	6.5	7.7	5.3
Preferred stock	5.5	7.3	6.2	5.4	5.7	4.6	7.1
Common stock	64.2	66.1	55.7	61.1	80.4	76.3	81.0
Miscellaneous†	2.4	1.8	1.7	1.9	1.7	2.6	1.5
Cash items‡	23.5	19.4	28.9	21.3	5.7	8.8	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* 1936 figures here would show little change from 1935, as may be seen by consulting Standard Statistics' figures for a smaller group of companies than treated here for the years 1935–36.

† Chiefly nonsecurity items.

‡ Including U.S. government securities regularly treated by investment companies as a method of employing cash pending its use in bonds and stocks of private corporations.

Not only did common stocks dominate the portfolio choices of the entire group of companies, but within the group there was little difference in the policies of companies with senior securities in their capital structures and those having nothing but common shares outstanding, as is evident from the figures below. Thus, while common stock represented on the average less than 40 per cent of the paid-in capital of American companies which issued bonds and/or preferred stock, their common-stock holdings at the market never fell below 54.5 per cent during the period, and in 1935–36 were about 75 per cent of the total assets.

It is noteworthy that the policies of the American group which issued senior securities were in sharp contrast to British com-

panies with similar capital structures. Over a period of nearly fifty years, British companies have tended to hold bonds, preferred stocks, and common stocks in their portfolios in approximately the same ratios as these securities have been represented in their capital structures. Through such a policy British companies have successfully safeguarded the interest and dividend requirements of their own securities. Conversely, many American companies with similar capital structures were compelled to suspend preferred dividends during the period 1930–33, when their cash dividends from common stocks held fell off drastically.

TABLE 6

PERCENTAGE OF ASSETS REPRESENTED BY COMMON STOCKS FOR TWO MAJOR INVESTMENT COMPANY GROUPS, 1929–35

GROUP	YEAR-END						
	1929	1930	1931	1932	1933	1934	1935
12 companies with senior securities	65.2	62.6	54.5	59.3	76.0	72.4	74.6
11 companies with common stock only	62.6	70.9	57.0	63.3	85.0	80.0	86.0

Further analysis of diversification indicated that (1) the average number of securities in portfolios varied from 75 in 1929 to 94 in 1935, with the range in each year being all the way from 25 to several hundred; (2) within the prominent common-stock category diversification was largely confined to industrial and utility common stocks through 1932, to industrials from 1933 on;[22] (3) while 800 to 1,000 different stocks were included in the portfolios of all companies combined at any one time, 50 stocks of changing composition usually represented about 50 per cent of the total invested funds (excluding cash) at the market.[23] These 50 stocks

[22] The ratios of industrial and utility common stocks, respectively, to the total assets of 23 companies at the year-ends 1929–31–33–35 were as follows: for industrials, 30.6 per cent, 25.8 per cent, 60.9 per ceat, 62.7 per cent; for utilities, 15.8 per cent, 17.2 per cent, 7.5 per cent and 8.9 per cent.

[23] For a group of 33 companies, the percentage of 50 common stocks to total value of investments, excluding cash, was 46.6 per cent, 52.9 per cent, 47.4 per cent and

were those of the best known and largest corporations in the country,[24] stocks which many "amateur" common-stock buyers probably purchased anyway without reliance on managers of investment companies;[25] (4) diversification was almost exclusively domestic in character, again sharply contrasting with the British practice. In Great Britain, the original investment-trust movement was largely a reflection of capital seeking investment abroad

TABLE 7

PERCENTAGE OF ASSETS OF 23 INVESTMENT COMPANIES INVESTED IN VARIOUS TYPES OF ECONOMIC ACTIVITY, PERIOD 1930–35

TYPE OF ACTIVITY	YEAR-END						
	1929	1930	1931	1932	1933	1934	1935
Railroads	11.1	9.8	6.2	6.1	9.5	7.9	5.6
Utilities	18.6	22.4	23.6	24.3	12.6	11.3	15.4
Industrials	32.1	35.0	27.4	32.3	63.2	63.1	66.0
Banks, insurance, and finance	7.6	7.5	6.1	7.8	3.8	4.3	3.2
Other investment companies	2.6	0.9	1.2	1.6	2.3	1.0	2.7
Foreign securities	1.4	1.5	1.0	0.8	0.7	0.6	0.1
Miscellaneous	3.1	3.5	5.6	5.8	2.2	3.0	1.8
Cash items	23.5	19.4	28.9	21.3	5.7	8.8	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

at higher rates of return than could be obtained at home. The conclusions given above are supplemented by Table 7, which shows the complete picture of diversification by types of economic activity.

50.6 per cent for the year-ends 1929–31–33–35, respectively. The changing composition of the leading stocks is reflected by the fact that of the first 50 in order of number of companies held by at the end of 1929, only 28 were still in the list at the end of 1935.

[24] At the end of 1935, the 10 most widely held stocks for a group of 66 investment companies were, in order of popularity: General Motors, American Gas and Electric, Standard Oil of New Jersey, International Nickel, Montgomery Ward, Union Carbide and Carbon, General Electric, Chrysler Corporation, Dupont, and Sears, Roebuck.

[25] This argument may be answered in part by saying that it neglects the factor of "expert" management and neglects also the fact that the small investor is unable to achieve even this much diversification in stocks when acting for himself.

The continued adherence to common stocks through 1930–32, when, relative to bonds, their price record was inferior, is unquestionably a major factor in explaining the poor record of management-investment companies as a group from 1930 through 1936. The shift into common stocks which most managements made late in 1932 or early in 1933 was commendable but was unable to produce results through the succeeding years which offset the earlier losses resulting from too rigid an adherence to this type of security. Nor is there any evidence that in their selection and liquidation of specific securities managements as a group made a noteworthy record.[26]

What the composite figures do not explain is why a comparatively few companies made excellent records. In part, of course, the explanation is that these companies had managements which were keener in their selection and liquidation of specific securities.[27] In part, it reflects the fact that a number of companies did hold from 30–50 per cent senior securities through the entire period or built their portfolios around a flexible common-stock policy, involving a sharp shift into (primarily) cash and United States government securities in 1930–32 and back into common stocks just preceding or at the beginning of recovery.[28]

[26] Theoretically, shifts in portfolio should come about *before* the earnings or prices of a security are being undermined. At the very least, looking backward, it seems clear that those securities which have made a poorer record should have been liquidated and those which have made a better record should have been purchased in greater than average amounts. To discover whether such a desirable correlation existed, and how strong it was, a study was made in the shifts which took place in the list of 50 most widely held stocks at the end of 1930 and 1932, respectively, and at the end of 1932 and 1935, respectively. The results were not especially favorable to investment companies as a group. For 1930–32, 66 stocks were included in the first 50 as of both year-ends. Only 20 of the 33 which showed a greater than average fall in market price were liquidated in greater than average amounts. For the period 1932–35, 71 stocks were included in the combined lists, and of the 35 which showed a better than average price rise, 25 were purchased in greater than average amounts.

[27] There was an increasing tendency for the better companies to rely on trained research groups within the investment-company organization for general and specific economic information as a guide to investment policy.

[28] For the Lehman Corporation, the percentage of total assets at the market represented by cash items and common stocks respectively were as follows, for the year-ends 1930–31–32–33–36: 26.2–53.4; 46.6–33.0; 23–50; 9–75; 5.3–78.8. These shifts illustrate clearly the type of policy mentioned above.

For management companies as a group, it is apparent that the continuing emphasis has been and probably will continue to be the possibilities of appreciation from the holding of a diversified list of common stocks. If this is correct the long-run record of investment companies in this country will rest in large part on the validity of the common-stock theory of investment for the period beginning roughly in the first part of the present decade, though, of course, exercise of the management function will cause the ratio of common stocks to total investments to vary somewhat and the composition of the common-stock group to vary a great deal over any considerable period. In a recent authoritative study for the period beginning in the 1890's and ending in the early 1930's, Professor Bosland concluded that the weight of factual evidence shows that a diversified list of common stocks, bought since the middle 1890's and held for periods of about twenty years, usually resulted in larger income and appreciation in capital value than could have been obtained from high-grade bonds or preferred stocks.[29] But Bosland quickly and correctly added that "no criticism of the common stock theory of investment is so impressive as the one which warns that the findings of the past may be of little value for the future."[30] Specifically, the question is whether the factors favorable to increased common-stock earnings in the earlier period are likewise favorable for the period we have now entered, or, if not, whether new factors affecting common stocks have entered the picture.

One of the factors favorable to common-stock earnings in the earlier period was the persistent tendency toward inflation seen in the rise of commodity prices from about 1896 to 1920 and after 1920 in relatively stable prices in the face of falling costs. Looking toward the future today, the indications are that the trend of commodity prices will not be downward, considering the pressure toward inflation resulting from our huge gold supply, excess reserves, and government fiscal policies. This factor, at least,

[29] Chelcie C. Bosland, *The Common Stock Theory of Investment* (New York: Ronald Press, 1937).

[30] *Ibid.*, p. 73.

would appear to be favorable to the long-run trend of common-stock prices.

Another factor often cited as helping to account for the growth of industrial production and corporate profits in the earlier period was the rapid growth in population. More recently, and at the present, the rate of population growth has been rapidly tapering off, and some population experts have predicted that our population may become static by 1975 or earlier. This, however, does not mean that rising productivity cannot continue rapidly if human wants are considered to be quite indefinitely extensible and if technical progress continues to reveal new products and cheaper methods of making old products. Granting continued industrial expansion based on technical progress, together with pressure toward an increasing supply of money and credit, the future of corporate earnings and common-stock values would seem to be reasonably favorable.

There is one serious offsetting factor, however, which was not present to as large an extent in the earlier period, and this is the present trend toward increasing government intervention, socialization, and taxation. Continuance of this trend will limit sharply the long-run profits of the public utility industry through increased regulation, direct competition, or outright purchase and operation of many utility properties. Again, it may result in further efforts to obtain for employed labor a larger share of corporate income. It may take the direction of a vigorous trust-busting movement designed to restore free competition over wide areas and so limit profits. Certainly, it is likely to mean continued increase in the burden of taxes on corporate business. In general, the probabilities now seem excellent that pressure toward government regulation and ownership of private business will continue to be exerted. The effects cannot but be unfavorable for the future of common-stock earnings and prices.[31]

One other unfavorable factor of less importance may be mentioned. Most investment companies operating today were formed at a time when stocks were selling at from 20 to 40 times peak-

[31] The previous paragraph is meant to be objective and not reflective of the writer's opinions with respect to programs of social control.

year earnings. Though the price-earnings ratio dropped somewhat during 1930–32, it returned to a level of about 20 times current earnings in 1933–36. Those investment companies which shifted strongly into cash or bonds during 1931–32 and back into common stocks early in 1933 overcame their early disadvantage of purchase at high prices to some extent, but all of them are vulnerable today to the possibility that in the future interest rates might rise and the price-earnings ratio on common stocks rise in sympathy with it. This contrasts sharply with conditions existing in the earlier period down to the late twenties, when it was usual for market price to capitalize earnings at about 10 per cent.

In sum, there seem to be stronger and more unfavorable factors to the long-time future for common stocks today than in the period beginning in the 1890's and ending in the early 1930's. In other words, a management-investment company organized forty years ago to operate on the common-stock theory would probably have been in a stronger position than one organized in 1928–29 and operating today on that same theory. Given exceptional managements with ability to select continually the best common stocks and to call major swings in the market, some companies, of course, will continue to make excellent records. But the long-term prospects for better-than-average success for investment companies as a group do not seem favorable to the writer as long as they continue to adhere almost exclusively to common stocks in their investment portfolios.

Some mention should presumably be made of different types of investment-company securities and their record through the period. The security approach, of course, is not identical with a comparative study of investment companies from, say, the standpoint of relative net-asset preservation. Thus, bonds and preferred stock in a top-heavy capital structure may suffer severely in income and asset protection during a mild deflation, while senior securities, which are an insignificant portion of paid-in capital, may still be adequately protected after even a severe shrinkage in security values. Again, common stocks preceded by senior securities in the capital structure are almost inherently more speculative than those representing sole claim against earnings and assets. It is the security approach, of course, in which the

prospective investor is interested. Brief attention will therefore be given to investment-company bonds, preferred stocks, and common stocks through this period.

Investment-company bonds have been relatively unimportant in the capital structures of American investment companies, and their record has been good. For 39 companies studied by the writer which issued senior securities, only 12.5 per cent of paid-in capital was represented by bonds in 1929, and large open-market purchases and retirements during 1930–36 steadily reduced this percentage. In a group of seventeen companies which issued bonds, there were no defaults during the period, and at the end of 1936 fixed charges were being covered on the average 1.67 times, while liquid-asset coverage averaged 2.94 times. Turning to preferred stocks, we find that for the 39 companies mentioned above, such stocks represented 49.5 per cent of the paid-in capital. Their record was less excellent than that of the bonds. On the basis of full dividend coverage during 1930–36, practically no preferred stocks qualify as high-grade investments, though about half maintained full dividend payments throughout the period. At the end of 1936, dividend requirements were being earned on the average 0.92 times, the average ratio of net assets to liquidating requirements was 1.80, and nearly half the preferred stocks were still partly in arrears on dividends suspended during the depression.[32]

Common stocks of investment companies divide into two general types: (1) "leverage stocks," e.g., those preceded by senior securities having fixed par or liquidating requirements and (2) "nonleverage stocks," or those representing the sole type of security in the capital structure. Nonleverage stocks, in turn, divide into those of mutual companies and those of nonmutual companies. Leverage stocks have been extremely speculative, tending to move farther in price, both up and down, than the movements in net assets of their issuing companies.[33] Few of them have paid dividends, and most of them, reflecting chiefly the fact that the

[32] Among the (first) preferred stocks which maintained dividends through the period 1930–36 were those of General American Investors, Blue Ridge, Tri-continental, and Atlas Corporation.

[33] This, of course, is due to the fact that they are preceded by senior securities having fixed par or liquidating values.

assets of most issuing companies have never fully recovered from the 1929 debacle, sell today considerably below their prices at the end of 1929.[34] They continue to rank among the most speculative stocks on the market.

The nonleverage stock of a company which has not been mutualized represents a proportionate equity in a fund, but the holder of this type is unable to resell his shares to the issuing company at their liquidating value. Rather, he must rely on the open market or a stock exchange to dispose of his shares. Ever since the 1929 crash this has been important, since practically all stocks of this type have continued to sell at prices substantially below their liquidating values.[35] In general, investors in this type of stock have received cash dividends regularly and have seen the value of their shares move in rough proportion with the net assets of issuing companies. Since for most companies net assets at the end of 1936 had not recovered to 1929 year-end levels, neither had the value of their shares. For a few excellently managed companies, however, liquidating values per share at the end of 1936 had risen above the 1929 figure.[36]

Stocks of mutual companies merit considerable attention, since it is the mutual company which has become increasingly popular since 1929 and especially since 1933. In a mutual company the shareholder is able to resell his holdings at any time at (approximately) liquidating value. Consequently, market value never falls below liquidating value by more than the margin charged by the company for repurchase of the stock.[37] Most of these companies engage in a continuous offer of their shares at liquidating

[34] An investor who purchased one share of "leverage" stock in each of 23 companies included in this study at the end of 1929 would have had a loss in capital value of 60 per cent for the period ending December 31, 1936.

[35] For the best explanation of this, see discussion of operating expenses in relation to operating record in an earlier section of this article.

[36] This group included the Lehman Corporation, National Bond and Share, Third and Fourth National Investors, and, from the mutual group, State Street Investment Corporation.

[37] Nor will the market value rise above liquidating value where the company is engaged in continuous sale of its shares (except by the amount of the "loading charge.")

value plus a fixed "loading" charge, thereby differing again from most of the predepression companies, whose original capital offerings have not since been augmented.[38]

This development of mutual companies has been highly desirable. Not only is their capital structure simple, as it should be when common stocks represent all or most of the investment holdings, but managements are placed in the position where they must produce satisfactory results from the shareholders' viewpoint or find their funds and number of shareholders shrinking. Apparently the federal government subscribes to the merits of this type of investment company also, as in 1936 it placed indirect pressure on companies which were not mutual in type to "mutualize" as rapidly as possible by giving such companies an opportunity under the Revenue Act of that year to escape the payment of all federal income taxes. The government's definition of what constitutes a mutual company under the Act goes much farther than the simple one given above, and apparently was intended to describe what the government considered to be a "good" investment company.[39]

The effect of this action has been to speed up a trend toward mutualization that had been evident for some years. Predepression units, such as Massachusetts Investors Trust, Incorporated Investors, and State Street Investment Corporation, all having the mutual feature, have undergone a tremendous expansion in capital funds and number of shareholders since 1930. Others of

[38] Most of the predepression companies, in fact, repurchased and retired considerable portions of their own securities during the 1930–36 period. This was generally profitable to the remaining security-holders, as open-market purchases were made below par or liquidating value.

[39] Space does not permit all the provisions of this definition to be listed here. Among them are the requirements that to qualify as a mutual company, a company must derive at least 95 per cent of its gross income from dividends, interest, or gains on the sale of securities, must derive less than 30 per cent of its gross income from sale of securities held less than six months, must not invest over 5 per cent of its gross assets at cost in the securities of any one corporation or government (excepting U.S. government securities), and must own not over 10 per cent of the outstanding securities of any one corporation. These provisions and others are in addition to the usual one that shareholders may resell shares at any time to the issuing company at approximately liquidating value.

the older companies not having the mutual feature originally have been changing their policies and capital structure in order to conform with the requirements of the 1936 Revenue Act. Post-depression units have almost invariably been mutual in type.

Growing popularity of the mutual-type company has not been the only structural change in the past few years in the management-company field. From 1930 to 1934, two of the largest of the investment companies now operating, Atlas and Equity Corporations, were fashioned by their promoters out of the wreckage of forty or more predepression investment companies whose managements were either unwilling or unable to cope successfully with the 1930–33 deflation. Neither Atlas nor Equity has restricted its activities to the functions of a "pure" investment company. Under the leadership of Floyd B. Odlum, Atlas has combined property management with investment management, as well as undertaking to carry through important reorganizations of properties temporarily brought under its control. Equity has branched out into the field of insurance, where it has been followed more recently by Tri-continental Corporation. The complete story of Atlas and Equity, however, cannot be detailed here. There is no doubt that the forthcoming government report on investment trusts will cover fully the history and practices of these two units, particularly the "high-powered" methods by which they were built up.

Another structural change has been the tendency of the management companies formed since 1932 to embody certain restrictive features possessed by the ill-fated fixed trusts. In most of these new companies the directors are limited in their selection of securities to a list of eligible companies as constituted from time to time by vote of the shareholders, and are otherwise restricted as to policy also. A final variation in structure has been the rise of companies selling shares on the instalment plan. In general, the period since 1932 has witnessed a revival of interest in management companies which have a simple capital structure, which are mutual in type, and which place certain general restrictions on management.

A complete analysis of the management-investment company

during the period 1930–36 would have to include consideration of their policies with respect to publicity on operations and accounting methods, as well as an inquiry into certain questionable practices with which such companies have often been charged. Realizing that these policies and practices would soon be given emphasis in the forthcoming report on investment trusts and companies by the Securities and Exchange Commission, the writer has chosen to concentrate in this article on the operating record and portfolio policies of a representative group of these companies. It has been shown that, for the group as a whole, the record has been inferior as compared with any measuring stick of investment success which might be chosen, and that, except for about 25 per cent of the companies, the operating record has not yet justified the existence of these companies as investment mediums. It has also been demonstrated that the inferior record was based on a too rigid adherence to common stocks in the years 1930–32. It has been further argued that the long-term prospects for common stocks do not appear altogether favorable today, and that the long-term portfolio policies of investment companies should therefore involve more diversification as between types of securities than it has in the past. Finally, it has been urged that even if common stocks remain the basic type of security for the long term, managements should adopt a cyclical-portfolio policy which would involve much smaller holdings of common stocks in periods of deflation than in periods of recovery.

Whatever their limitations have been, investment companies are probably here to stay. Little public opposition to them remains today, older units which already have their capital funds and are not mutual in type can continue indefinitely even if they make only an average record, and newer units of the mutual, limited management type with one class of stock have been finding some favor with investors.[40] Such federal legislation as may be enacted in the near future is expected to strictly regulate but

[40] A survey by the writer of 31 companies organized from 1932 to 1935 indicated that at the end of 1936 these companies had paid-in capital of about $130,000,000 and net assets of about $188,000,000. Nearly all these companies were of the mutual, limited management type.

not to abolish the institution. Granting that investment companies will continue to operate, then it is to be hoped that the high quality of management which a few companies showed during the period 1930–36 will be extended to the majority of companies as the institution matures. It is to be hoped, for example, that managements will devote more attention in the future than they did in the past to the merits of other types of securities than common stocks, and especially that a more flexible type of common-stock policy over the business cycle will become more general. Within the limits of this general policy it is to be hoped that there will be increasing ability on the part of managements to select continuously specific securities having better-than-average possibilities. Structurally, it is to be hoped that this improving quality of management will be associated more and more with the mutual type of company having a capital structure of one class of stock. If these developments occur, then a large number of investment companies may come to be useful mediums for the small investor who finds it difficult to obtain directly the advantages of diversification and continuous skilled investment management.

APPENDIX I

LIST OF 58 COMPANIES INCLUDED IN THIS STUDY CLASSIFIED ACCORDING TO TYPE OF CAPITAL STRUCTURE AS OF THE YEAR-END 1929

I. Companies issuing bonds, preferred stock, and common stock: Adams Express, Alliance Investment Corporation, American European Securities, Capital Administration, Continental Securities Corporation, General American Investors, General Public Service, Guardian Investors, Investment Company of America, North American Investment Corporation, Railway and Light Securities Corporation, Standard Investing Corporation, Western Reserve Investing Corporation

II. Companies issuing bonds and common stock: Aldred Investment Trust, American International Corporation, Old Colony Investment Trust, Overseas Securities, and Shawmut Bank Investment Trust

III. Companies issuing preferred stock and common stock: Allied International Investing Corporation, American Capital, Bankers' Investment Trust of America, Chartered Investors, Investors' Corporation, Morristown Securities, North American Utility Securities, Penn Investment Company, Prudential Investors, Second National Investors, U.S. and

Foreign Securities, U.S. and International Securities, Utilities Associates, Utility Equities, Blue Ridge, Central Illinois Securities, Chicago Corporation, Securities Corporation General, Selected Industries, and Tri-continental Corporation.

IV. Companies issuing common stock only: Boston Personal Property Trust, Broad Street Investing, Capital Management, Fourth National Investors, General Capital, Inland Investors, Investment Corporation of Philadelphia, Investors and Traders, Lehman Corporation, Managed Investments, Mayflower Associates, National Bond and Share, Public Investing Corporation, Rochester Capital, Spencer Trask Fund, Shawmut Association, Third National Investors, State Street Investment Corporation, Massachusetts Investors Trust, Incorporated Investors.

APPENDIX II

FIRST FIFTEEN INVESTMENT COMPANIES IN ORDER OF ADJUSTED NET-ASSET PRESERVATION, 1930–36[41]

1. State Street Investment Corporation[42]
2. Broad Street Investing Corporation[42]
3. Mayflower Associates[43]
4. General American Investors
5. Lehman Corporation
6. Capital Administration
7. North American Utility Securities
8. National Bond and Share
9. Fourth National Investors
10. U.S. and Foreign Securities
11. Tri-continental Corporation
12. Second National Investors
13. Bankers Investment Trust of America
14. Penn Investment Company
15. Shawmut Association

[41] Adjusted net assets computed as follows: Beginning figure is net assets as of December 31, 1929. To this figure is added all additional capital issued during the period 1930–36 and from it is subtracted the cost of all capital repurchased and retired. The ending figure is net assets as of December 31, 1936, to which figure is added all dividends and interest paid out by the given company during the period 1930–36. The ending figure, thus adjusted, is then taken as a percentage of the beginning figure, as adjusted.

[42] Changes in capital were so marked for these two companies over the period that the net-asset change for these companies was based on change in net assets per share from the end of 1929 to the end of 1936.

[43] This company was voluntarily liquidated near the close of 1936.

INDEX NUMBERS AND PUBLIC UTILITY PROPERTY VALUATION—*Concluded*

FRANK A. MANCINA[1]

VALUATION OF PUBLIC UTILITY PROPERTIES

INDEX numbers used as the basis for the reproduction cost valuation of public utility properties present the research worker a very fertile field of interesting problems. The scope of this study permitted the study of only two of the many problems encountered in an index-number appraisal of public utility properties. The first problem dealt with the setting-up of a method of measuring labor cost changes so that changes in wages and changes in the output of labor can be measured at one and the same time.

The second problem with which this study was concerned was the possible use of conversion factors calculated for metropolitan areas in determining the reproduction cost of plant located in rural areas.

A METHOD FOR MEASURING LABOR COST CHANGES

Theoretically, for reproduction cost purposes an index of labor costs should measure the changes in both the level of wages and the output of labor. The output of labor is the amount of work that can be done; it is affected by improved methods, more skillfully trained workers, the use of mechanical devices, and the conditions under which the work must be done.

The labor output of cable-splicers in the laying of underground cable is a case in point. As a result of the adoption of scientific methods and the use of mechanical devices the output of cable-

[1] The author is a teaching assistant in the School of Business of the University of Chicago. Mr. Mancina takes pleasure in acknowledging his indebtedness to Maynard Cook, partner Sloan and Cook, Consulting Engineers, Chicago; Dr. W. J. Graham, associate professor of accounting, the University of Chicago, and L. M. Spurling, methods and study engineer, Illinois Bell Telephone Company. They gave freely of their time, experience, and material, and thus made possible the completion of this study. However, the conclusions reached and any errors which may have occurred in the calculations are the writer's sole responsibility.

splicers has tended to increase. However, under existing traffic conditions, it is imperative that a man be placed on the top of the manhole to direct traffic while the cable-splicers work in the trench below. This additional man causes a decrease in the average labor output of the cable-splicer gang. The following method of obtaining an index of labor costs is an attempt to measure the change in the output of labor and the change in the level of wages.

Suppose that an index of labor cost of the Exchange Pole Line Account is necessary for 1932 in order that the labor portion of

TABLE 6

Class B Poles (in Feet)	Quantity Constructed	
	1931	1932
20	10	20
25	400	50
30	500	400
35	100	70
40	200	none
45	10	none
50	5	none
Cross-arms	100	50

existing 1931 plant may be carried forward to the year-end 1932 cost. The first step is to analyze the labor portion of the actual plant constructed under large projects for the years 1931 and 1932 to determine the number of man-hours required in each year under these similar projects. Suppose that the number of various items of plant constructed in 1931 and 1932 are as given in Table 6. Suppose further that the total number of man-hours actually required to construct the 1931 additions were 4,340 and the total man-hours actually required to construct the 1932 additions were 2,550.

The next step is to set up a schedule of man-hour analysis first for the 1931 additions and then for the 1932 additions, illustrated by Tables 7 and 8. The purpose of these schedules is to determine the amount of labor time required to erect the same type of plant in the two years.

There are several operations required in erecting a pole. These are unloading from car, shaving, gaining, framing, hauling,

TABLE 7

SCHEDULE OF MAN-HOUR ANALYSIS, 1931 ADDITIONS

(a) Plant Constructed	(b) Quantity	(c) Tentative Man-Hour per Unit Installations	(d) Total Tentative Man-Hours (b×c)	(e) Ratio of Actual to Tentative Man-Hours*	(f) Actual Man-Hours per Unit Installation (e×c)
20-ft. pole	10	1.0	10	2	2.0
25-ft. pole	400	1.2	480	2	2.4
30-ft. pole	500	1.5	750	2	3.0
35-ft. pole	100	2.0	200	2	4.0
40-ft. pole	200	3.0	600	2	6.0
45-ft. pole	10	4.0	40	2	8.0
50-ft. pole	5	6.0	30	2	12.0
Cross-arms	100	0.6	60	2	1.2
Total	.....	.....	2,170	.....	.....

* $\frac{\text{Total actual man-hours}}{\text{Total tentative man-hours}} = \frac{4,340}{2,170} = 2$.

TABLE 8

SCHEDULE OF MAN-HOUR ANALYSIS, 1932 ADDITIONS

(a) Plant Constructed	(b) Quantity	(c) Tentative Man-Hour per Unit Installations	(d) Total Tentative Man-Hours (b×c)	(e) Ratio of Actual to Tentative Man-Hours*	(f) Actual Man-Hours per Unit Installation (e×c)
20-ft. pole	20	1.0	20	3	3.0
25-ft. pole	50	1.2	60	3	3.6
30-ft. pole	400	1.5	600	3	4.5
35-ft. pole	70	2.5	140	3	6.0
40-ft. pole	none	3.0	.....	3	9.0
45-ft. pole	none	4.0	.....	3	12.0
50-ft. pole	none	6.0	.....	3	18.0
Cross-arms	50	0.6	30	3	1.8
Total	.....	.....	850	.....	.....

* $\frac{\text{Total actual man-hours}}{\text{Total tentative man-hours}} = \frac{2,550}{850} = 3$.

digging the hole, and erecting. The tentative man-hours required per unit installation are estimates and must be accurate

in the relative sense only. For example, if it takes 10 minutes to unload a 20-foot pole, then it should take 30 minutes for a 50-foot pole; likewise, if it takes 2½ hours to dig a hole for a 20-foot pole, it should take 6½ hours to dig a hole for a 50-foot pole, etc. Adding the time required in all operations for a pole of a certain size gives the total tentative time required to erect that unit of plant (see Tables 7 and 8, col. *c*). The quantities of plant are multiplied by the tentative hours required to place that plant. The sum of column *d* in Tables 7 and 8 is the total tentative man-hours required for plant constructed.

The total tentative man-hours are divided into the actual total man-hours evidenced in the records of actual plant construction. The resultant ratio is the adjusting factor by which the tentative man-hours per unit installation are transferred into actual man-hours per unit installation. In Table 7 this ratio is 2 and in Table 8 it is 3.

The next step is to analyze the pay-roll records and obtain the average hourly wage paid to this type of labor in 1931 and 1932. Assume that this is $1.10 for 1931 and $1.00 for 1932. With this further assumption the labor cost conversion factor for 1932 can be obtained. This computation is illustrated by Table 9.

The plant in service as of December 31, 1931, is based on the plant measurement records which give both the items of existing plant and the quantity of each item. The actual man-hours required for the installation of each unit of plant are carried forward from column (*f*) in Tables 7 and 8. The total man-hours required in 1931 and 1932 to construct the existing plant are determined by multiplying the per unit time required by the quantity of each item in existence. These total man-hours are then multiplied by the average hourly wages paid in 1931 and 1932 yielding the total labor cost that would be incurred if the plant were reconstructed first at December 31, 1931, and then, at December 31, 1932.

The ratio of total labor cost required in 1932 to total labor cost required in 1931 is the labor cost conversion factor. The labor portion of property existing at the beginning of the period would cost more to reconstruct at 1932 than it did in 1931. It will

be noticed that this happened because labor output in 1932 (in the hypothetical example) decreased more than did the price of labor. The conversion factor—136.36—reflects the changes in wage levels and labor performance.

COMPARISON OF COSTS OF PUBLIC UTILITY PLANT IN METROPOLITAN AND RURAL TERRITORIES

A large number of utilities furnish service in territories of two different types—metropolitan and rural. The problem that this

TABLE 9

COMPUTATION OF THE 1932 LABOR COST CONVERSION FACTOR, TOTAL PLANT, EXCHANGE POLE LINE ACCOUNT

(a) Plant in Service December 31, 1931	(b) Quantity December 31, 1931	(c) Actual Man-Hours per Unit Installation 1931	(d) Actual Man-Hours per Unit Installation 1932	(e) Total Actual Man-Hours 1931 (b×c)	(f) Total Actual Man-Hours 1932 (b×d)	(g) Average Hourly Wage 1931	(h) Average Hourly Wage 1932	(i) Total Labor Cost, 1931 (g×e)	(j) Total Labor Cost, 1932 (g×f)
20-ft. pole	100	2.0	3.0	200	300	$1.10	$1.00	$ 220	$ 300
25-ft. pole	4,400	2.4	3.6	10,560	15,840	1.10	1.00	11,616	15,840
30-ft. pole	1,500	3.0	4.5	4,500	6,750	1.10	1.00	4,950	6,750
35-ft. pole	400	4.0	6.0	1,600	2,400	1.10	1.00	1,760	2,400
40-ft. pole	300	6.0	9.0	1,800	2,700	1.10	1.00	1,980	2,700
45-ft. pole	50	8.0	12.0	400	600	1.10	1.00	440	600
50-ft. pole	25	12.0	18.0	300	450	1.10	1.00	330	450
Cross-arm	800	1.2	1.8	960	1,440	$1.10	$1.00	1,056	1,440
Totals	.....	.....	.....	.....	.....	.....	.....	$22,352*	$30,480*

* Labor cost conversion factor = $\frac{\$30,480}{\$22,352} = 136.36$.

section will be concerned with is the possible use of conversion factors calculated for metropolitan areas in determining the reproduction cost of plant located in rural areas.

There are three main sources of error in the application of metropolitan area conversion factors to rural area properties. These are:

1. Items used in metropolitan areas may not be items of plant in rural properties; conversely, items used in rural areas may not be items of plant in metropolitan properties.

2. There may be differing proportions of the same items of plant in metropolitan and rural territories.

3. The variations in the cost of labor may not be the same in the two areas.

Items used in metropolitan accounts may not appear in rural accounts.—Coin-box collectors for local service are an important item in the Station Apparatus Account[2] of telephone properties in certain metropolitan areas, but they are not an important item of plant in the rural account. The possible extent of error in the

TABLE 10

CONVERSION FACTORS OF STATION APPARATUS ACCOUNT

YEAR	TOTAL PLANT		GROSS ADDITIONS	
	Including Coin-Box Collectors	Excluding Coin-Box Collectors	Including Coin-Box Collectors	Excluding Coin-Box Collectors
1923.....	100.0	100.0	100.0	100.0
1924.....	101.0	101.5	108.4	101.4
1925.....	102.4	97.8	109.6	98.6
1926.....	91.8	90.0	107.0	96.7
1927.....	99.2	98.8	109.1	99.0
1928.....	93.7	91.4	106.4	98.8
1929.....	85.3	90.9	97.8	97.8
1930.....	99.1	104.2	101.2	104.0

valuation of the rural account by use of the metropolitan conversion factor is illustrated by Table 10.

Generally speaking, if a given item is a substantial part of the metropolitan account and this same item does not appear in the rural account, then, in periods in which the cost of this item increases more rapidly than the cost of the other items in the account, the value of the rural account will be overstated; in periods in which the cost of this item decreases more rapidly than the cost of the other items, the value of the rural account will be understated.

[2] The Station Apparatus Account is Account 231 in the Federal Communication Commission classification of telephone utility property. This account consists of the original cost of station apparatus either for customers' or for company's use, excluding cost of installation and inside wires.

Differing proportions of the same items of plant in metropolitan and rural areas may be present.—Even though the same items of plant are present in both areas a different proportion of the same items in the rural area will be a source of error when metropolitan indices are applied to rural accounts.

To illustrate, there are two main types of central office telephone equipment[3]—dial and manual. The dial equipment is more common to metropolitan property while the manual equipment is more widely used in rural property.

TABLE 11

CONVERSION FACTORS OF CENTRAL OFFICE TELEPHONE EQUIPMENT ACCOUNT

Year	Manual	Dial	Composite
1924.....	92.6	86.3	92.0
1925.....	98.1	100.4	98.5
1926.....	88.4	96.9	90.3
1927.....	95.7	97.0	96.0
1928.....	90.6	93.8	91.5
1929.....	95.6	96.5	96.0
1930.....	113.0	110.7	111.5
1931.....	101.7	100.0	101.1

The error involved depends on the size and the direction of the difference between the relative amounts of the same item included in the metropolitan-rural accounts. The point may be illustrated by the case of multiple jacks and answering jacks in switchboards. Because of the inherent characteristics of the multiple jack, the cost of manufacture decreases with the increased use of the product.

As between these two items the multiple jack has by far the greater relative weight in the metropolitan equipment than in equipment used in rural areas. With the aid of the figures above it is easy to see that the value of the rural account in 1929 would be understated.

[3] The Central Office Telephone Equipment Account is Account 221 in the Federal Communication Commission classification of telephone utility property accounts. This account consists of electrical instruments, apparatus, and equipment other than station apparatus. It also contains items of auxiliary plant such as chairs, desks, and tools for central office use.

Differing proportions of labor and material costs in the two territories.—Labor cost in the rural area may be less than in the metropolitan area. A case in point is underground cable. It is more difficult and more expensive to lay underground cable in the heavy traffic districts of metropolitan areas. Likewise, it is more expensive to put up aerial cable in a residential district of a metropolis as compared to a rural run.

Labor rates do not change uniformly in metropolitan and rural areas. Higher costs of living and a greater tendency to unionize

TABLE 12

Description	Price		
	1920	1929	Ratio
Multiple jack.....	55.59	23.52	42.2
Answering jack....	113.55	62.70	55.2

in large cities will tend to increase or to peg the price of labor. These factors cause a change in labor rates that will differ as between metropolitan and rural labor.

Labor cost may be greater in rural areas. Because more of a certain type of work may be done in metropolitan areas, the class of labor necessary for that type of work tends to be more efficient and consequently the per unit cost of that class of labor tends to be less in metropolitan areas.

There may be either a greater or less amount of labor cost incurred relative to material cost. The valuation of the rural account may be too high or too low, depending upon the per cent of labor involved in the metropolitan composite cost conversion factor. All these error factors may be present at one time. They may work in the same direction and compound the error; they may work in opposite directions and thus be offsetting. One thing is fairly certain, however. The cost conversion factors for the same type of plant in metropolitan and rural accounts will, in all probability, not be equal.

An indication of the degree of error arising from the use of

metropolitan conversion factors in rural property valuation may be had by the application of the conversion factors given in Tables 10 and 11. Let us suppose that the rural equipment for Station apparatus does not include coin-box collectors but is otherwise the same. The true value of the account would be shown if the conversion factors which exclude coin-box collectors were used. However, if the metropolitan factors were used, the rural account would be carried forward with an index that in-

TABLE 13

DIFFERENCE IN THE VALUATION OF RURAL STATION APPARATUS*

YEAR	REPRODUCTION COST NEW		DIFFERENCE	PERCENTAGE DIFFERENCE (COL. 3 = BASE)
	Including Coin-Box Collectors	Excluding Coin-Box Collectors		
1924	$ 1,337,971	$ 1,316,590	$ 21,381	1.62
1925	1,496,295	1,392,479	103,816	7.45
1926	1,485,626	1,351,058	134,568	9.96
1927	2,074,238	1,877,414	196,824	10.48
1928	2,290,462	2,048,147	242,315	11.83
1929	2,165,743	2,077,512	88,231	4.25
1930	2,282,495	2,308,907	−26,412	−1.14
1931	2,352,542	2,407,394	−54,852	−2.28
Total	$15,485,372	$14,769,501	$705,871	4.78

* The book cost, gross additions, and retirements for the station apparatus account were obtained from the records of a large midwestern public utility. The Reproduction Cost New of property was determined by the writer, using the method outlined in the previous article published in the April Journal.

cludes coin-box collectors. The size of error is demonstrated by Table 13.

If no coin-box collectors had been present in the rural account, the use of metropolitan conversion factors would have given too high a reproduction cost in six of the eight years. In any single year the valuation would not have been overestimated by more than 11.38 per cent and over the entire eight-year period the total valuation as expressed by the metropolitan conversion factors would have been only 4.78 per cent too high.

A similar calculation for degree of error in the Central Office Telephone Equipment Account shows differences in any one year

as large as 4.21 per cent and as small as 0.23 per cent. Table 14 presents the percentage differences in the valuation of the rural account, as expressed by metropolitan conversion factors, that would occur if several assumptions made as to types of property existing in the two territories were true. The assumptions made refer to the percentage of the total central office telephone equipment that is manual equipment. The assumptions are, first, 50 per cent manual equipment existing in the metropolitan account

TABLE 14

PERCENTAGE DIFFERENCE IN THE VALUATION OF RURAL CENTRAL OFFICE TELEPHONE EQUIPMENT*

YEAR	50 Per Cent Manual over 90 Per Cent Manual	50 Per Cent Manual over 100 Per Cent Manual	90 Per Cent Manual over 100 Per Cent Manual
1924	−2.32	−3.00	−0.70
1925	−1.07	−1.47	− .40
1926	2.51	3.10	.58
1927	2.56	3.13	.56
1928	3.43	4.21	.76
1929	3.01	3.70	.67
1930	1.96	2.41	.44
1931	1.31	1.55	0.23
Average	1.53	1.83	0.29

* The book cost, gross additions, and retirements for this account were obtained from the records of the same midwestern utility. The Reproduction Cost New of property was determined by the writer using the method outlined in the previous article published in the April *Journal*.

and 90 per cent manual equipment in the rural account; second, 50 per cent manual in the metropolitan account and 100 per cent manual in the rural account; and third, 90 per cent manual equipment in the metropolitan account and 100 per cent manual equipment in the rural account.

Not all accounts in the two divisions will show a difference in the same direction for the same period of time. An excellent example of this is the comparison of Tables 13 and 14 with Table 15. In metropolitan districts larger-sized poles, of which there is a diminishing supply, are used. There is relatively a larger

supply of smaller-sized poles for telephone use simply because there are more of them and because the larger poles are a lumber item. This relatively greater proportion of high-priced poles in the metropolitan account makes the material cost a greater percentage of total cost than it is in the rural account. Because of this the proportion of labor cost in the total account is greater in the rural properties. If the labor portion is a greater percentage of the total cost, and labor costs increase more rapidly

TABLE 15

DIFFERENCE IN THE VALUATION OF THE RURAL EXCHANGE POLE LINE ACCOUNT*

YEAR	REPRODUCTION COST NEW		DIFFERENCE	PERCENTAGE DIFFERENCE (COL. 3 = BASE)
	Using Metropolitan Conversion Factors	Using Rural Conversion Factors		
1924	$ 1,565,283	$ 1,630,074	−$ 64,791	− 3.98
1925	1,534,656	1,560,563	− 25,907	− 1.66
1926	1,599,792	1,660,283	− 60,491	− 3.64
1927	1,757,455	1,908,605	− 151,150	− 7.91
1928	2,258,736	2,507,542	− 248,806	− 9.92
1929	2,559,408	2,714,487	− 155,079	− 5.71
1930	2,662,232	2,979,190	− 316,958	−10.64
1931	2,828,537	3,118,801	− 290,264	− 9.31
Total	$16,766,099	$18,079,545	−$1,313,446	− 7.26

* The book cost, gross additions, and retirements for this account were obtained from the records of a large midwestern public utility. The Reproduction Cost New of property was determined by the writer, using the method outlined in the previous article published in the April *Journal*.

than material costs, then the reproduction cost of the Rural Exchange Pole Line Account will be underestimated if it is determined by the use of the metropolitan conversion factor. For the years 1924–31 inclusive this was true in the utility used as an example. Table 15 presents the difference in valuation resulting from the use of metropolitan and rural conversion factors. The reproduction cost of the rural account is underestimated in every year.

It would be a tremendous job to make a similar analysis for all accounts present in utility property. Instead, a study was made of significant subclasses of utility property to determine

how costs do change in the metropolitan and rural divisions. The property of a midwestern utility was grouped into outside plant, inside plant, office equipment, and buildings. A cross-section of plant as of December 31, 1931, was selected for both materials and labor. The cross-sections were then priced out for the years 1914–31 inclusive. Aggregative index numbers with fixed weights based on 1931 quantities were computed separately for materials and labor and were merged into a composite on the basis of the proportions of labor and materials in the gross additions. The prices of materials were obtained from the price lists issued by the manufacturer from whom the utility purchases. The wage-rates used were the average yearly wages paid by the utility measured by a weighted arithmetic mean of wages paid in the first month of each quarter in each calendar year.

The resulting index numbers are presented in Charts I and II which appear at the end of this section. By weighting the index of each type of property by the percentage of total investment represented by that property, a composite cost index of the entire physical plant and equipment existing in the two divisions was obtained and is presented in Chart III.

The individual account which showed the greatest divergence in both the material cost index and labor cost index was one in the outside plant group. The labor indices, material indices, and composite labor and material indices of this account for the two divisions are presented in Charts IV, V, and VI.

In individual accounts the index numbers showed wide variation in price changes both for materials and labor in the metropolitan and rural divisions. The price variations of groups of property were not as great as price variations in the individual accounts. However, in Chart III, it can be easily seen that the price changes between the two divisions for the entire plant differed very little and for all practical purposes may be said to be the same. In fact, for the period 1914–31, for this particular utility, the reproduction cost value of total rural plant would have been more frequently understated than overstated and in greater amounts, if, instead of rural conversion factors, metropolitan conversion factors had been used.

CHART I

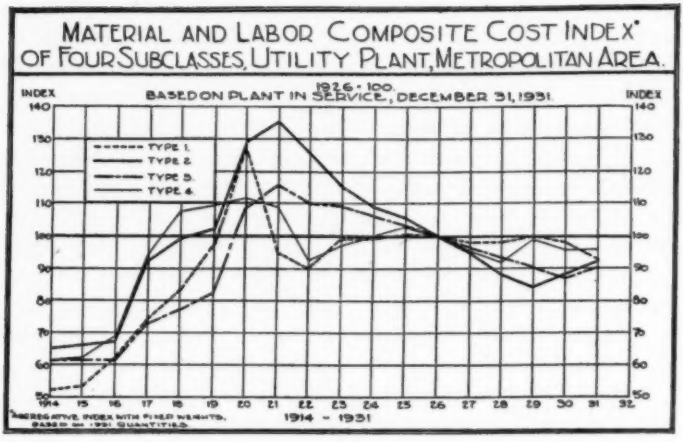

MATERIAL AND LABOR COMPOSITE COST INDEX* OF FOUR SUBCLASSES, UTILITY PLANT, METROPOLITAN AREA.
1926 - 100
BASED ON PLANT IN SERVICE, DECEMBER 31, 1931.
INDEX
TYPE 1.
TYPE 2.
TYPE 3.
TYPE 4.
1914 - 1931
*AGGREGATIVE INDEX WITH FIXED WEIGHTS, BASED ON 1931 QUANTITIES.

CHART II

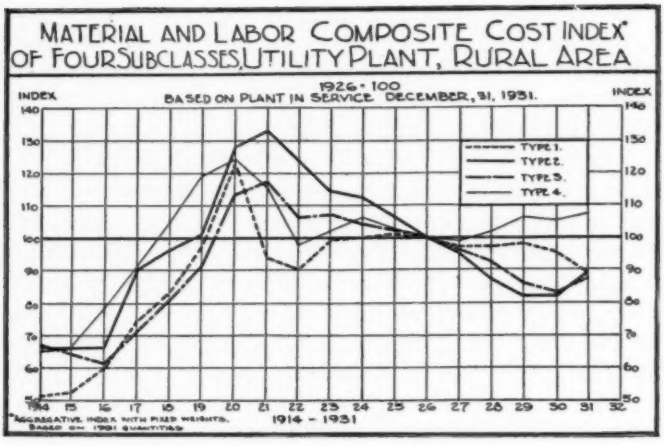

MATERIAL AND LABOR COMPOSITE COST INDEX* OF FOUR SUBCLASSES, UTILITY PLANT, RURAL AREA
1926 - 100
BASED ON PLANT IN SERVICE DECEMBER, 31, 1931.
INDEX
TYPE 1.
TYPE 2.
TYPE 3.
TYPE 4.
1914 - 1931
*AGGREGATIVE INDEX WITH FIXED WEIGHTS, BASED ON 1931 QUANTITIES

CHART III

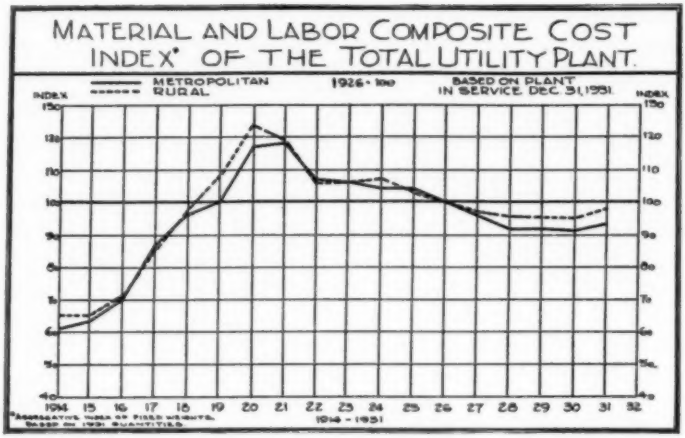

MATERIAL AND LABOR COMPOSITE COST INDEX* OF THE TOTAL UTILITY PLANT.
METROPOLITAN
RURAL
1926 - 100
BASED ON PLANT IN SERVICE DEC. 31, 1931
INDEX
1914 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1914 - 1931
*AGGREGATIVE INDEX OF FIXED WEIGHTS, BASED ON 1931 QUANTITIES.

CHART IV

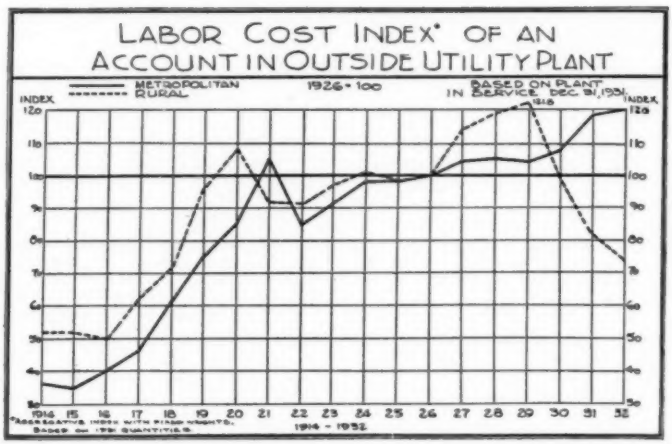

LABOR COST INDEX* OF AN ACCOUNT IN OUTSIDE UTILITY PLANT
METROPOLITAN
RURAL
1926 - 100
BASED ON PLANT IN SERVICE DEC. 31, 1931
INDEX
1914 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1914 - 1932
*AGGREGATIVE INDEX WITH FIXED WEIGHTS, BASED ON 1931 QUANTITIES.

CHART V

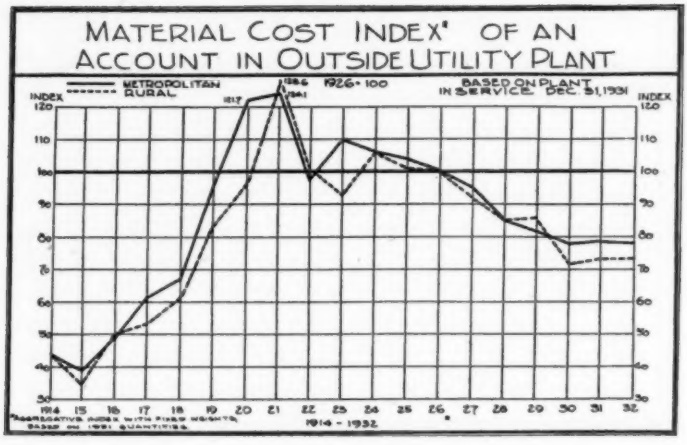
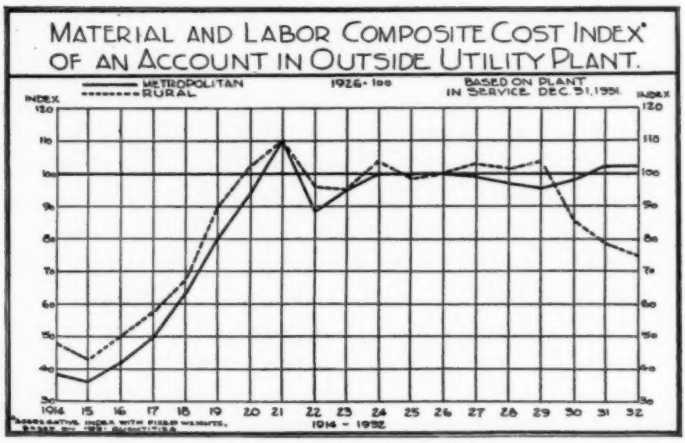

MATERIAL COST INDEX* OF AN ACCOUNT IN OUTSIDE UTILITY PLANT
METROPOLITAN
RURAL
1926 - 100
BASED ON PLANT IN SERVICE DEC. 31, 1931
INDEX
1217
1286
1241
1914 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1914 - 1932
*AGGREGATIVE INDEX WITH FIXED WEIGHTS, BASED ON 1931 QUANTITIES.

CHART VI


MATERIAL AND LABOR COMPOSITE COST INDEX* OF AN ACCOUNT IN OUTSIDE UTILITY PLANT.
METROPOLITAN
RURAL
1926 - 100
BASED ON PLANT IN SERVICE DEC. 31, 1931
INDEX
1914 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1914 - 1932
*AGGREGATIVE INDEX WITH FIXED WEIGHTS, BASED ON 1931 QUANTITIES.

SUMMARY AND CONCLUSIONS

It has not been the purpose of this study to contrast the index-number method with actual cost, or historical cost, or prudent investment, or any of the other elements considered in determining public utility valuations. Furthermore, it has not been the objective of this study to point out court opinions which establish the legality of the index-number method. Nevertheless, the question of legality may be clarified somewhat by Mr. Carl I. Wheat's[4] interpretation of the opinions handed down in two recent rate cases involving the use of index numbers, although the method in the two cases was not that presented in the writer's article published in the April issue of this *Journal*.

It has been asserted by certain writers that in the West Case[5] The Supreme Court interdicted and prohibited the use of "price trends" in arriving at "the present as compared with the original cost of construction," and that regulatory commissions are therefore forced to use the "imaginary reproduction method." The present writer does not so read that decision. Nor was that precise question before the court in that case. What the court apparently there did was to declare "inapt and improper" the particular machinery used by the Maryland commission in arriving at a derived "value" through "the application of general commodity indices to a conglomerate of assets constituting a utility plant." Indeed, it seems probable that had the broad trends of cost and prices of the specific kinds of property under consideration been used by the commission, as they were in fact used by the company in that very proceeding, the court's decision would have been a very different one, for the court specifically declared that it did not mean to say that price trends are to be disregarded, but "quite the contrary," and it added that "evidence of such trends is to be considered with all other factors."

In the West Case the combination of: (1) the use of general commodity indices, rather than specific price indices applicable to the particular type of property in question; (2) the alleged "weighting" of the various indices that were used; (3) the asserted adoption of "spot prices" which had recently resulted from a "precipitate decline" in price levels; and (4) the use of the results thus determined as the sole measure of "values," seems to have been the vice of the commission's decision, in the minds of the majority justices. This fact, when considered in connection with the court's emphatic

[4] Mr. Wheat is telephone rate counsel for the Federal Communications Commission's telephone investigation department.

[5] *West, et al.*, v. *Chesapeake and Potomac Telephone Company of Baltimore City*, 295 U.S. 662.

disapproval in numerous other decisions of many individual elements of imaginary "reproduction new" appraisals, such as "paving over mains" appears definitely to indicate that a reasonable use of specific price trends . . . . would be approved as against the imaginary elements of cost built up through a hypothetical physical "reconstruction" or "reproduction" of the property, under conditions not present when it was actually constructed.

There is nothing to the contrary in the Supreme Court's decision in the "Ohio Bell" case.[6] In that case the commission had admittedly used certain price and cost trends in arriving at its conclusion as to "value" but for some reason best known to itself it had refused to afford the company access to the figures or trends which it thus used. Protests were vain, and the court very properly declared such arbitrary action to be a patent denial of "the fair hearing essential to due process." But nowhere did the court suggest a condemnation of the use of proper and apposite price trend data after a fair hearing, in which there had been full opportunity for cross-examination and rebuttal.[7]

And it is certainly a "reasonable use of specific price trends" with which the index-number method, as presented in this study, is concerned.

The writer takes issue, however, with Mr. Wheat on his condemnation of

the necessity for including . . . . in reproduction cost the cutting and replacing of pavement not historically cut or replaced, the cost of meeting increased traffic and city growth, and a myriad of like "difficulty factors" that were not present when the plant under consideration was actually constructed, together with diverse other hypothetical costs which an actual physical "reproduction" of the property might conceivably entail.[8]

This condemnation of "difficulty factors" can be applied bodily to the method of measuring the change in labor cost presented herein. Mr. Wheat would consider the change in the wage level but not in what has been called "labor performance." But why does he favor measuring the change in wages? Certainly the new level of wages "was not present when the plant under consideration was actually constructed." Can it be that wages must be considered because "reproduction cost" is the cost that would be

[6] *Ohio Bell Telephone Company* v. *Ohio Public Utilities Commission*, 57 S.Ct. 724.

[7] C. I. Wheat, "The Present as Compared with Original Cost of Construction," *Public Utilities Fortnightly*, August 5, 1937, pp. 138, 139.

[8] *Ibid.*, p. 135.

incurred under existing conditions if the plant were to be reconstructed? If that be true, and if changes in wages are considered, why should an index of labor costs neglect the change in the performance of labor?

After presenting the index-number method, this study considered the reliability of the method. The two implicit assumptions (accuracy of records and representativeness of cross-section) have been fulfilled in the cases with which the writer is acquainted and which used the method as herein explained. And certainly the difference of 2 per cent in valuation of the utility which conducted an appraisal of its property by the two methods (index-number and field-inventory) is, for all practical purposes, nil when one brings back to mind the wide divergence in the valuations arrived at by engineers supposedly going through the like procedures on a field-inventory basis. However, the major portion of the difference in reproduction cost value obtained by different engineers for the same property is directly traceable to the difference in methods of calculating depreciation charges.

The index-number method involves a fraction of the cost required by the field-inventory method. Appraisals by use of index numbers may be determined much more expeditiously than under the field-inventory method. For all practical purposes the index-number method is substantially as reliable as the field-inventory method of obtaining "reproduction-cost" value. Indeed, field appraisals must in most instances in the future make way for appraisals prepared by the use of index numbers "if there is to be economical and effective regulation in the present situation, in which reproduction cost is an important or even dominant factor in the 'fair value' which commissions are required to find."[9]

One of the questions under consideration in this study was whether or not conversion factors calculated for the metropolitan portion of a utility plant could be used in determining the reproduction cost of the rural portion of plant. There certainly is no reason to expect the conversion factors of the two divisions to coincide on any single account. The conversion factors of a number

[9] Dissenting opinion: *West, et al.*, v. *Chesapeake and Potomac Telephone Company of Baltimore City*, 295 U.S. 662.

of accounts will show that costs may be changing at a more rapid (or less rapid) rate in one division as compared to the other. But the over-all tendency is to cancel out. That is, where one account may be overestimated, another may be underestimated. In the utility for which this problem was studied, the tendency was for the differences to balance out. For all practical purposes there was no difference between the two divisions (see Chart III). And in fact, the utility would have shown a smaller reproduction cost value of its rural property by using the metropolitan conversion factor. This is not the general rule. It may be only a coincidence. Nevertheless, it did happen in this utility for the period 1914–31 inclusive. A study of other utilities for the same period would lead to more conclusive results.

The conclusions arrived at as a result of this study are:

1. If the appraisal of public utility properties made by the use of index numbers is as carefully prepared as that described in this study, the index-number method is substantially as reliable as the costly and time-consuming field-inventory method of obtaining reproduction cost value of utility plant.

2. It is possible to calculate indexes of labor cost which reflect not only the change in the level of wages but also the change in the performance of labor.

3. A study of the index numbers presented in the charts indicates that the particular utility analyzed may safely apply conversion factors calculated for metropolitan plant to rural plant for the period 1914–31. However, only one utility was measured in this study. For more conclusive results concerning utilities in general a number of utilities performing various types of services and in different geographic regions would have to be studied.

4. The dissenting opinion presented by Mr. Justice Stone in the West Case and Mr. Wheat's interpretation of the majority opinions in the West Case and the Ohio Case give sound basis for concluding that the index-number method would be looked upon by the courts as favorably as the present methods of obtaining reproduction cost valuation of public utility property.

NORTH DAKOTA STATE HAIL INSURANCE, 1911–36[1]

GILBERT W. COOKE[2]

WITH the establishment of the Federal Crop Insurance Corporation under Title V of the Agricultural Adjustment Act of 1938,[3] and the authorization of the use of twenty million dollars during the fiscal year ending June 30, 1939, to insure producers of wheat against loss in yield due to unavoidable causes, the federal government has entered a new field of activity in the attempt to solve the economic problem of the American farmer. Inasmuch as the law lays down only general principles for the three directors of the Corporation and does not give any specific directions for the determining of participation, the levying of premiums, or the payment of claims, it is believed that any study of a previous crop-insurance program will supply suggestions in procedure. Having this idea in mind, this paper presents the experience during a twenty-five year period of the North Dakota State Hail Insurance Department. Such a study will be of importance for the proposed crop insurance in wheat, because, during the representative period of 1919–32 North Dakota raised 12 per cent of the total wheat crop in the United States.[4]

North Dakota is one of the earliest states in the United States to engage in the insurance of any growing crop against losses due to natural phenomena. While this experience was limited to only one type of disaster, namely, hail, yet the principles in-

[1] The writer wishes to acknowledge the facilities furnished him in the preparation of this paper while he was a member of the faculty of the University of North Dakota. Mr. Wilford Miller aided in the construction of the charts.

[2] Assistant professor of finance, College of Business Administration, Bowling Green State University (Ohio).

[3] *Public Act No. 430*, c. 30, 75th Cong., 3d sess., *House Report No. 8505*.

[4] Calculated from production figures taken from *Survey of Current Business, 1936* (suppl.), p. 94; *Supplement to the Monthly Review of Agricultural and Business Conditions*, Ninth Federal Reserve District, VI (Jan. 29, 1935), 200A.

volved and the problems arising have been such as are likely to recur in the administration of the new federal program. The analysis of the North Dakota State Hail Insurance experiment has been divided into three phases differentiated in the main by the degree of compulsion in participation: phase one covers voluntary insurance during the years 1911–18; phase two includes compulsory listing with voluntary withdrawal from 1919 to 1931; phase three comprises the remodified voluntary type from 1932 to the present.

I. VOLUNTARY INSURANCE, 1911–18

The earlier law of 1911 provided for the application of insurance, the collection of the premiums, the adjustments of the claims, and the settlement of the losses. During the first two years the commissioner of agriculture and labor administered the law; after that the commissioner of insurance, elected by popular vote, directed the program.

The application for hail insurance in this first phase was solicited by the local assessor or by the county auditor. The assessor was given the duty to

> . . . . inquire of the party assessed how many acres of crop, if any, such party desires to have insured in said hail insurance department for the year in which such assessment is made, and at the same time inform said party that as a premium for said hail insurance a payment of twenty cents (20) per acre for each and every acre so insured must be made. . . . .[5]

Parties who failed to insure when the assessor called could later make application through the county auditor until August 15. Applications and payments were turned over by the local officials to the commissioner of insurance and the state treasurer, respectively. The insurance was in force from the time of filing until the grain was cut or until September 15.

The adjustment of the hail loss was made by the board of county commissioners, or, after an amendment in 1913, by a competent person appointed by them. The adjuster was instructed by law to

> . . . . take into consideration the cost of harvesting, threshing, and marketing said crops as if no loss had occurred, and deduct the same from the amount

[5] *Laws of North Dakota, 1911*, c. 23, sec. 2; *ibid., 1913*, c. 192, sec. 2.

that the crop would have brought provided no loss had been sustained, and allow as damages the same proportion that the crop as damaged bears to the crop as if no loss had occurred; provided, however, that in no case shall more than eight dollars per acre be allowed for wheat, flax, oats, barley, rye, and other grains.[6]

In case the farmer was dissatisfied with the adjustment, he and the adjuster each appointed a person, which two should appoint a third to form a board of arbitration whose judgment should be binding.

After the adjustment by the local officials the final settlement was made by the state commissioner of insurance subject to this significant limitation:

. . . . The total sum of such (operating) expense shall first be deducted from the total amount of the hail insurance receipts for that year and paid, and if the balance remaining is sufficient, all hail losses shall be paid in full as allowed by the adjustors but if the expenses and hail losses shall exceed the amount of hail receipts for that year, then the expenses shall be paid first and the losses shall be paid pro rata. However, should there in any one year, after all expenses and losses have been paid, still be a surplus, then such surplus shall remain in the hail insurance fund to be drawn upon in future years when there might be a deficiency.[7]

Actual payment of the claims, of course, was made by the state auditor with warrants drawn upon the state treasurer in conformity to the certified list submitted by the commissioner of insurance and chargeable to the State Hail Insurance Fund built up by the above-mentioned collections.[8]

Measured by the amount of insurance taken away from the private companies, the percentage of claims paid, and the economy in operation, one may conclude that the first phase of state insurance was not successful. During this period, private insurance firms carried annually from sixteen to thirty-six million dollars worth of hail risk; state hail insurance, however, never reached a million dollars worth of risk. For the years of 1913–18,

[6] *Ibid.*, *1911*, c. 23, sec. 6. [7] *Ibid.*, sec. 11.

[8] No compensation was allowed the state treasurer for paying the warrants, the state auditor for issuing them, the county auditor for turning over the collections, or the county auditor for handling the applications. The local assessor was allowed one-half cent per acre and the adjuster was paid five dollars per day. Expenses were thus kept low by using existing governmental officials without giving them additional compensation.

inclusive, for which both state and private amounts of risk are available, state hail insurance was 4.5, 3.0, 1.5, 2.9, 1.9, and 1.4 per cent of the total state and private risks.[9] Table 1 supplies data on the percentage of losses paid to claims and the expenses.

Because the statutory premium of twenty cents (raised to thirty cents in 1913) was inadequate to cover all the losses allowed, the commissioner of insurance was compelled to prorate the losses for each year. At the same time, the private companies, although using a rate about twice as high, paid all the losses in

TABLE 1*

DATA ON NORTH DAKOTA STATE HAIL INSURANCE, 1911–18

Year	No. of Policies	Premiums	Losses Allowed	Losses Prorated (Per Cent)	Expenses	Percentage of Expense to Premium
1911.....	1011	$26,109	$ 30,729	70	$3,422	13.1
1912.....	2505	64,840	105,339	55	4,822	7.5
1913.....	773	27,214	28,285	88	3,074	11.3
1914.....	761	27,772	38,439	65	2,877	10.3
1915.....	580	20,853	24,935	75	2,182	10.4
1916.....	845	33,113	79,372	38	3,101	9.4
1917.....	300	11,954	16,634	62	1,873	15.7
1918.....	475	19,910	33,121	53	2,373	11.9

* Hail Insurance Department, *Biennial Reports, 1912–1918.*

full. In summary, during these eight years the private companies collected $13,826,614 and paid out $11,596,610; the state collected $213,767, recognized losses of $376,874, but paid out only $205,754. Thus the private companies had a gross profit of $2,230,004 and the state fund a gross loss of $171,120 which was borne by the policy holders in prorated claims. The private rates averaged 6.94 per cent of the risks; the state rates, 3.75 per cent. The lower state rates did not attract the farmer because of the uncertainty of the claim payment.[10] Furthermore, although the private rates were classified by zones approximating the probability of loss by hail, the state rates were the same for each applicant. Such a uniform rate structure greatly favored the claimants in twenty-two counties having losses above the state average and

[9] Calculated from the dollar figures; see Table 7.

[10] See Table 8.

discriminated against those in thirty-one counties with losses below the average.

In his report for 1914, the commissioner of insurance, Mr. W. C. Taylor, attributed the failure of the state hail insurance to the neglect of the assessor, the unseasonable period of seeking applications, the collection of the premium in advance of the crop harvest, the newness of the idea of state insurance, and the lack of funds for state publicity. In his next report he concluded:

> . . . . . There is now general recognition of the fact that the present system of State hail insurance, which is simply mutual insurance with the Commissioner of Insurance as general manager without pay, is a pretty thoroughgoing failure. It will never be anything else, no matter how much or how long legislatures tinker with it. Experience has demonstrated beyond cavil that men will not solicit their own insurance; that the state cannot successfully compete with privately owned and managed enterprises; that every undertaking of that nature has been fraught with disappointment and ultimate failure. I am speaking of state managed schemes in which membership is *voluntary. Compulsory insurance is another matter.*[11]

II. COMPULSORY LISTING WITH WITHDRAWAL PRIVILEGES, 1919–31

The second phase of the North Dakota State Hail Insurance program began with the passage of legislation in 1919 requiring the compulsory listing by the assessor of all cropped land and the provision for automatic insurance of all such listed cropped land for losses from hail unless such land was withdrawn by specific application of the insured party.[12] To permit the passage of this legislation two constitutional amendments had been adopted by the people in 1918: The one exempted the hail premium from the four-mill property tax limitation and authorized a zoning classification; the other provided for an acreage tax on land for the indemnification of growing crops against hail.[13] The law placed the administration of the state system in a Hail Insurance

[11] Commissioner of Insurance, *Biennial Report for 1916*, in *Public Documents for 1916* (Bismarck, North Dakota), p. 1309. Italics by the writer.

[12] *Laws of North Dakota, 1919*, c. 160. This legislation had been recommended by the two commissioners of insurance, W. C. Taylor and S. A. Olsness, and had been incorporated in the platform of the North Dakota Nonpartisan League in 1915. The League sponsored the two amendments and controlled the legislature in 1919.

[13] *Constitution of North Dakota* (1933) Arts. XXIV and XXX, sec. 177.

Department within the control of the elected commissioner of insurance.

As in the previous voluntary period, the solicitation of hail insurance was given to the local assessor. On or before the first of June in each year, he was to have filed with the county auditor (*a*) the number of tillable acres in every tract of land subject to taxation (exempting municipal and government land) and (*b*) the number of acres of land in crop or to be sowed or planted to crop during the given year.[14] Every owner, agent, or tenant was to file an affidavit that the amount of land so insured was cultivated; yet in case such was not filed, the report of the assessor bound the parties. However, prior to June 15, any owner of land could withdraw from the operation of the state insurance any portion of all land owned and cropped. Failure by the assessor to list any crop kept that crop from being covered unless the owner or tenant listed the land himself before June 10.[15] Insurance was in effect on winter crops by June 1 and on spring crops either by June 10 or at date of application (if after June 10); insurance ended on September 15.

Whereas in the preceding phase the crop loss was adjusted by an appointee of the county commissioners, in this new law all loss adjustment was placed in the commissioner of insurance. Official adjusters appointed by him visited the place of crop damage, estimated the percentage of the loss to the risk insured, and reported to the Hail Insurance Department. In case of dissatisfaction by the tenant or owner a reappraisal by a deputy inspector was made; if there were still disagreement a board of arbitration made the final decision. The maximum indemnity payment was seven dollars unless (after 1921) the party had filed application for an additional three dollars of crop protection.[16]

[14] *Laws of North Dakota, 1919*, c. 160, sec. 9; *ibid., 1921*, c. 77, sec. 9.

[15] This legislation was upheld by several state court decisions: *Bossen* v. *Olsness*, 48 N.D. 68, 182 N.W. 1013 (1921); *Brown* v. *Nelson*, 50 N.D. 589, 197 N.W. 203 (1924); *Schmitz* v. *Olsness*, 58 N.D. 604, 226 N.W. 29 (1929); *State* v. *Olsness*, 55 N.D. 692, 215 N.W. 145 (1927).

[16] *Laws of North Dakota, 1919*, c. 160, sec. 15–17. *Thomspon* v. *Olsness*, 54 N.D. 820, 211 N.W. 592 (1926) ruled that all claims must be paid before the commissioner could total them, as requested by law, on October 25. After that date the commissioner could not be compelled by writ of mandamus to adjust claims.

The inadequacy of the cash premium under the 1911 law was remedied here by directing the commissioner of insurance to levy an indemnity tax sufficient to cover the claims of the losses caused by hail and to meet the expenses of making the adjustments and operating the Hail Department. This tax was upon all the cropped acreage which the local assessor or the parties had listed, excepting that withdrawn by the tenant or the owner before June 15. The 1919 law limited this tax to fifty cents an acre; an amendment in 1921 raised it to seventy-one cents for the ten-dollar risk, and a second amendment increased the limit to 10 per cent of the insured risk, which was the same as seventy cents and one-dollar limits for the seven- and the ten-dollar risks, respectively.

Supplementing this indemnity tax on cropped land was an annual flat tax on all tillable land, excepting lands used for public roads, for manufacturing, for mining, or lands within incorporated jurisdictions. During the first two years (1919 and 1920) this flat tax was used also in the payment of claims; after 1921 it was allocated to a permanent surplus account, the funds of which were to be used as a sort of revolving fund to pay claims immediately. In 1923 the legislature directed the repeal of the flat tax whenever the permanent surplus reached a minimum of four million dollars. This occurred in 1927. For four years, 1919–22, the flat tax was three cents an acre; during the next five years it was only one cent an acre.[17] Over the entire nine years, 1919–27, $4,693,367 was levied on the tillable acreage.[18]

The collection of both the indemnity tax and the flat tax was left to the local and state tax officials. Both were "spread" on the tax rolls by the county auditor along with the other property taxes and were collected by the county treasurer to be turned over to the state treasurer for placing in a special State Hail Insurance Fund. After 1921 interest and penalties were attached if delinquent after March 1; an amendment in 1923 placed both interest and penalty in the permanent surplus until it reached a

[17] *Laws of North Dakota, 1919*, c. 160, sec. 6; *ibid., 1921*, c. 77, sec. 6; *ibid., 1923*, c. 232, sec. 6.

[18] *Annual Report of the Hail Insurance Department, 1930*, p. 85.

maximum of five million dollars, when it could be used for paying claims along with the indemnity tax.[19]

The payment of the claims was similar to the earlier method. The commissioner of insurance sent a certified list of the claimants to the state auditor, who mailed to the parties state warrants which were paid by the state treasurer out of the State Hail Insurance Fund. The state supreme court ruled that the warrants were not to be prorated because of the insufficiency of the fund; on the other hand, neither could the warrants be paid out of the general fund.[20] For the one year, 1923, in which the losses exceeded the amount which was raised by the limited indemnity tax, the legislature authorized in 1925 the 20 per cent back payment out of the permanent surplus.[21] Until the establishment of the revolving fund (by the permanent surplus), the claims in the fall were not settled before the following summer; after creating this fund, the actual payment date was advanced to November and December of the year in which the claims were filed. An act permitting the floating of loans in anticipation of taxes also aided in more immediate payments. The actual cash outlay of the Insurance Fund for the settlement of losses was lessened by an amendment in 1921 directing the commissioner to deduct from each loss the amount of back taxes due the state by the claimant. Table 2 indicates that the percentage of tax deduction to the total indemnity allowed varied from 15 to 47 per cent and averaged 21.71 per cent for the years 1919–36.

It seems desirable at this point to digress in order to discuss the expenses of adjusting the claims and of operating the Hail Insurance Department. Table 3 reveals that both the costs per claim and the percentage of the operating expenses to the indemnity levy varied inversely to the number of claims handled.

From the foregoing description of the second phase of the North Dakota Hail Insurance program, it will be recognized readily that the crux of the matter lay in the determination by the commissioner of an equitable indemnity tax which would bear

[19] *Laws of North Dakota, 1921*, c. 77, sec. 10; *ibid., 1923*, c. 232, sec. 6.

[20] *First National Bank* v. *Olsness*, 48 N.D. 786, 186 N.W. 751 (1921).

[21] *Laws of North Dakota, 1923*, c. 232, sec. 6.

a correct relation to the probability of loss and at the same time be low enough to attract business away from the private companies. To understand the problem clearly, one must have in mind a rough picture of the geography of the state of North Dakota. The eastern approximate one-third of the state lies in the fertile Red River Valley, having an annual rainfall of about

TABLE 2*

PERCENTAGE OF TAX DEDUCTION TO INDEMNITY ALLOWED
NORTH DAKOTA STATE HAIL INSURANCE

Date	Indemnity Allowed	Tax Deduction	Per Cent
1919			
1923	$19,639,323	$3,123,367	15.97†
1924	1,533,486	351,151	22.90
1925	1,367,293	393,970	28.75
1926	1,697,082	397,615	23.39
1927	3,274,560	818,508	24.90
1928	3,730,069	1,159,257	31.05
1929	1,555,064	307,830	19.68
1930	1,877,571	415,267	22.11
1931	970,323	285,161	29.38
1932	410,506	128,105	31.14
1933	218,466	62,938	28.90
1934	25,650	4,278	15.38
1935	2,862,672	1,048,519	36.62
1936	25,134	11,808	46.98
Total	$39,187,197	$8,507,774	21.71

* *Annual Report of the Hail Insurance Department, 1930–1936;* Board of Auditor's *Annual Report on Hail Insurance Department, 1924–30.*

† Data for 1919 to 1923 are not given separately. Percentages calculated.

twenty inches but very little hail except in four counties—Eddy, Logan, Lamoure, and Dickey. Crop failures here are infrequent, and then caused by rust or insects. The central portion of the state is on higher ground, somewhat less fertile, with about a seventeen-inch rainfall but with twice the hail losses as in the valley. Crop failures in the central section are more numerous than in the valley. The western part of the state has a rainfall of only about fifteen inches annually but about four times as many hailstorms. Also, in some of these western counties, the crop failures occur in about two out of every three years, although, because of the high productivity with correct climatic conditions,

the average wheat yield over the 1919–33 period was only three bushels less in the western counties than in the valley.[22]

To meet this differential in hail losses within the various sections of the state, private companies at the time of the establish-

TABLE 3*

SELECT ITEMS IN THE OPERATION OF THE NORTH DAKOTA STATE HAIL INSURANCE

Year	No. of Claims Handled	Cost of Adjustment per Claim	Percentage of Operating Cost to Indemnity Levy
1919	12,852	$ 4.90	2.24
1920	14,400	4.60	3.10
1921	21,081	4.31	2.92
1922	18,300	3.65	3.10
1923	25,667	3.55	4.51
1924	10,653	4.39	7.40
1925	8,100	4.06	6.73
1926	9,744	3.98	5.62
1927	16,780	3.87	4.37
1928	20,526	4.04	4.65
1929	8,151	4.70	9.59
1930	9,848	4.96	6.88
1931	6,610	6.54	11.45
1932	3,143	7.07†	17.90
1933	1,946	8.35†	31.70‡
1934	188	37.36†	104.80‡
1935	15,603	3.78†	6.74
1936	250	34.11†	98.98‡

* Commissioner of Insurance, *Annual Report of the Hail Insurance Department, 1920–36.*

† Calculated by the writer from the actual claim and expense dollar figures; the annual reports change this column to read cost per *acre.*

‡ Calculated by the writer; the annual reports made an error in placing the decimal point one place to the left. Also the 1933 report divided the expenses into the total receipts instead of the indemnity levy. Acknowledged by letter as of January 25, 1938.

ment of the compulsory law (1919) charged 6 per cent in 7 valley counties, 7 per cent in 9 other valley counties, 9 per cent in 6 north-central counties, 11 per cent in 13 southwestern counties, and 15 per cent in the remaining 19 counties in the central and northwestern part.[23] In contrast to this schedule the state in-

[22] North Dakota Planning Board, *Crop Statistics for the Years 1919–1933* (Grand Forks, North Dakota), 1936.

[23] Commissioner of Insurance, *Annual Report of Hail Insurance Department, 1923.*

demnity tax was the same in all the counties during the first 6 years of this period. For a $7.00 risk the indemnity rates were: 1919, 25 cents; 1920, 25 cents; 1921, 44 cents; 1922, 42 cents; 1923, 50 cents; 1924, 33 cents.

By 1923, however, the commissioner of insurance was ready to recommend a proportionate rate structure. His 1923 report stated:

> . . . . The past five years has convinced me that hail damages are much more pronounced in some parts of the state than in others, and that this condition must be met by an adjustment of rates if we would retain the patronage and goodwill of the farmers of those sections where the average rate for the state, hitherto charged, was obviously too high.
>
> The other states having state hail insurance adopted the zone system from the start. Also the line companies have enjoyed it for years and would never think of applying a uniform premium rate without regard to loss ratio, in hail insurance any more than they would in life and fire underwriting. Such a readjustment may not be looked upon favorably by the people who have enjoyed the advantage of the discriminatory rates in the past, but unless the abuse is corrected the sections with low loss ratio will withdraw their patronage from the Fund, thus leaving the territories with high loss ratio experience to bear their burden in the long run, anyway. Unless we would drive the Red River Valley district and other parts with low loss ratio away from the State Fund and into the fold of the private companies, who undersold us in the said districts last summer, we must adopt one of the proposed amendments or something better.[24]

Complying with the recommendation of the commissioner, the legislature in 1925 adopted a zoning system, effective with that crop year, which divided the state into four districts based upon the percentage of the dollar loss to the dollar risk insured.[25] Each county was considered a unit. Table 4 presents the district classification, the indemnity proportion, and the indemnity rate or tax levied by the commissioner.

The new zoning system, although a more equitable classification than the single uniform rate existing during the previous six years, was devised nevertheless, to give preference to the western counties with the greater hail loss. As shown by the captions of Table 4, whereas the loss to risk ratio between District I and District IV was as 3 is to 7, yet the indemnity ratio was as 5

[24] *Ibid.*, p. 3. [25] *Laws of North Dakota, 1925*, c. 151, sec. 7.

is to 8. Illustrating, Cass County (in the valley) with a loss ratio in 1925 of 1.11 per cent of risk, paid an indemnity tax per applicant of $0.23 per acre; Hettinger County (in the west), with a loss ratio of 12.17 per cent of risk, paid an indemnity tax of only $0.36 per acre. Such a schedule permitted the claimants in Hettinger County to pay a rate only 50 per cent higher than those in Cass for a hail loss which was 12 times as great.

TABLE 4*

INDEMNITY RATES LEVIED BY THE NORTH DAKOTA STATE HAIL INSURANCE DEPARTMENT

Year	District I Loss Risk under 3 Per Cent; Indemnity Ratio, 5		District II Loss Risk over 3 Per Cent, under 5 Per Cent; Indemnity Ratio, 6		District III Loss Risk over 5 Per Cent, under 7 Per Cent; Indemnity Ratio, 7		District IV Loss Risk over 7 Per Cent; Indemnity Ratio, 8	
	Rate	No. of Counties	Rate	No. of Counties	Rate	No. of Counties	Rate	No. of Counties
1925	$0.23	27	$0.27	14	$0.32	6	$0.36	6
1926	.28	32	.33	8	.39	6	.44	7
1927	.34	21	.41	13	.47	9	.54	10
1928	.43	19	.51	7	.60	6	.69	21
1929	.22	27	.27	12	.31	7	.36	7
1930	.27	31	.32	10	.38	5	.43	7
1931	.26	40	.32	7	.37	2	.42	4

* Commissioner of Insurance, *Annual Report of Hail Insurance Department, 1925–1931.*

Chart I presents at this point a percentage comparison of the hail losses paid to the indemnity tax (excluding the flat tax levied on all tillable acres) for three different periods of the hail insurance experiment. The first period covers the years 1911–18 when the uniform cash premium was collected in advance; the second comprises the years 1919–24 when the indemnity rates were levied uniformly by the commissioner of insurance; the third includes the years 1925–31 when the indemnity tax was levied on a proportionate basis of 5, 6, 7, 8, among the four districts. The basis for districting was the "actual cost of protection in each county as determined by the amount of the indemnity allowed and the acreage insured."[26] All the applicants within each county paid

[26] *Ibid.*

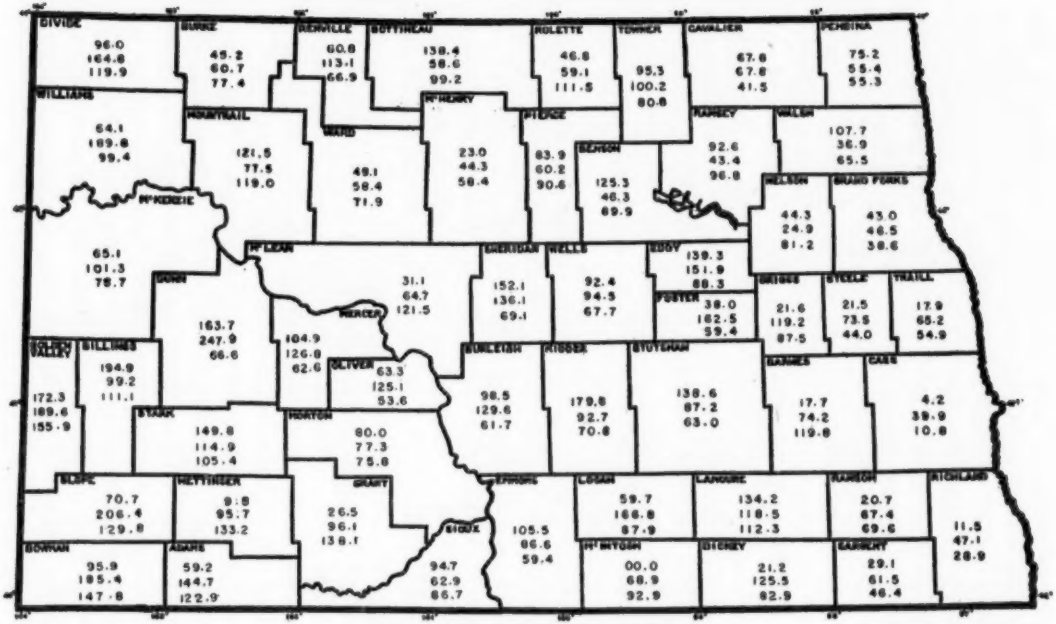
the same indemnity rate; the county rate depended upon the total county hail loss to the total county risk insured (see Table 4).

Let us now refer to Chart I for an explanation of the effect of these three different rate systems. The average percentage of state hail loss to insurance premium for the three periods was: 1911–18, 88.7 per cent; 1919–24, 100.6 per cent; 1925–31, 90.6 per cent. Using two counties with maximum and minimum losses, one finds that Cass County has (for the three periods) 4.2, 39.9, and 10.8 per cent of loss to premium, whereas Golden Valley County at the extreme western boundary has 172.3, 189.6, and 155.9 per cent of loss to premium. Considering the last period of 1925–31, the claimants in Cass County paid out $100 for every $10.80 of hail loss at the same time that Golden Valley claimants paid out $100 for every $155.90 of hail loss. A perusal of Chart I will reveal to the observer other wide discrepancies in the percentage of loss to rate.

One would expect that individuals living within those county areas wherein the indemnity rate was high relative to the hail loss would be inclined to file applications for withdrawal from the operation of the Hail Insurance Fund. That such withdrawals did take place to an alarming extent is evident from the data presented in Chart II. Herein is given the percentage of insured acreage to the cropped acreage for four select years: 1919, as the first year of the compulsory system; 1924, as the last year using the uniform rate; 1930, as a representative year at the close of the four-district zoning system; 1933, as the best year to use in the present voluntary system.[27]

It appears in Chart II that the farmers supported the new system reasonably well in 1919, the first year of operation, but that by 1924, the last year of the uniform rate, a noticeable epidemic of withdrawals had appeared in the valley counties having a low-hail frequency. Cass County, mentioned before, insured only 8 per cent of its crop acreage in the State Fund as compared with 63 per cent for Golden Valley. Other comparisons indicate

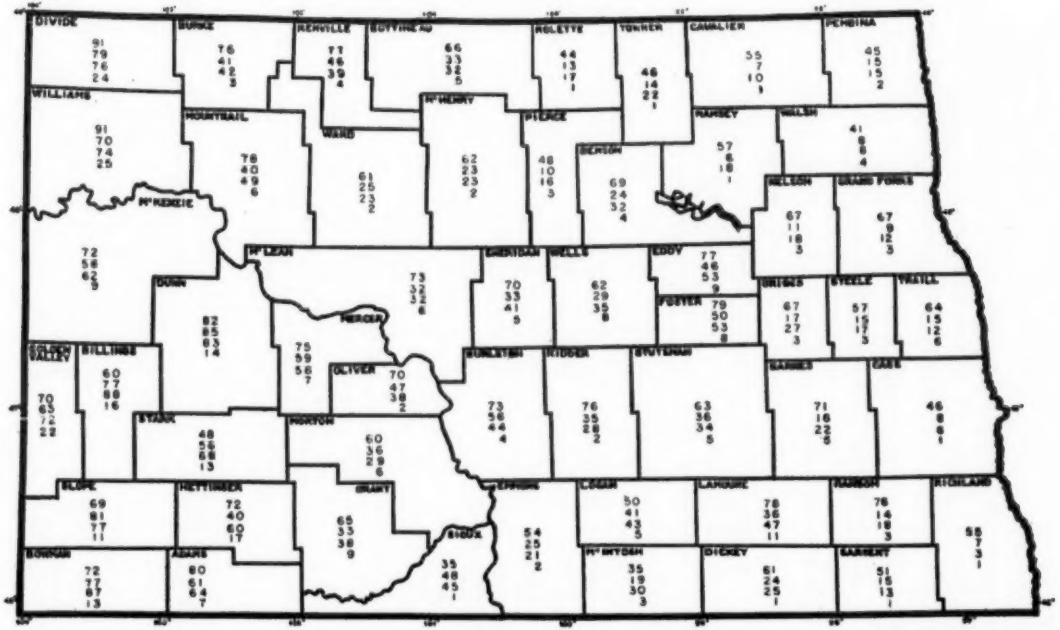
[27] In 1931 spots of North Dakota suffered a drought, and it was considered best to use 1930 rather than 1931 for the last year of the compulsory system. Another severe drought appeared in both 1934 and 1936, so 1933 was selected for the voluntary period. Reasons for not using 1935 are presented later in this paper.



LEGEND -
TOP FIG 1911-1918
MIDDLE 1919-1924
BOTTOM 1925-1931

NORTH DAKOTA STATE HAIL INSURANCE
PERCENTAGE OF HAIL LOSS TO INDEMNITY TAX
CHART I

SOURCE: CALCULATED FROM ANNUAL REPORTS HAIL INS DEPT., 1911-1931
STATE AVER 88.7, 100.6, 90.6



LEGEND:

TOP PER CENT – 1919
SECOND – 1924
THIRD – 1930
FOURTH – 1933

NORTH DAKOTA STATE HAIL INSURANCE
PERCENTAGE OF CROP ACREAGE INSURED
CHART II

SOURCE: 1919, 1924, 1930 FIG. HAIL INS RPT, 1930, P. 78
1933 FIG. CALCULATED, IBID, 1933, P. 30

the tendency for the counties with the highest percentage of hail loss to indemnity tax (see Chart I) to have the highest percentage of insured acreage to cropped acreage. Further analysis of Chart II indicates that the zoning system established in 1925 had the effect of slowing up withdrawals. Lastly, this chart shows the

TABLE 5*

DATA ON EXTENT OF USAGE OF THE NORTH DAKOTA STATE HAIL INSURANCE SYSTEM

Year	No. of Acres Insured	Percentage of Cropped Acres Insured	Percentage of State to Total State and Private Hail Insurance
1919	12,408,351	67	87.20
1920	12,053,743	63	80.62
1921	11,363,481	61	88.45
1922	9,187,985	49	88.23
1923	7,764,811	42	91.47
1924	5,468,946	30	85.01
1925	6,360,126	33	81.08
1926	6,136,813	31	89.24
1927	7,777,560	41	81.09
1928	6,689,119	34	78.26
1929	5,910,594	31	81.92
1930	6,491,479	34	83.87
1931	4,092,684	22	88.06
1932	1,163,321	6†	77.84
1933	1,080,951	6†	‡
1934	152,141	1†	69.29
1935	4,653,035	25†	90.64
1936	107,105	1†	48.59

* Commissioner of Insurance, *Annual Report of the Hail Insurance Department, 1920–1936*. Column 4 is calculated from Table 8.

† Cropped acreage for 1931 used; no later acreage given.

‡ Data on private risks omitted for the year in *Annual Report*.

serious decline in the percentage of crop acreage insured for the year 1933 representing the voluntary phase re-established in 1932.

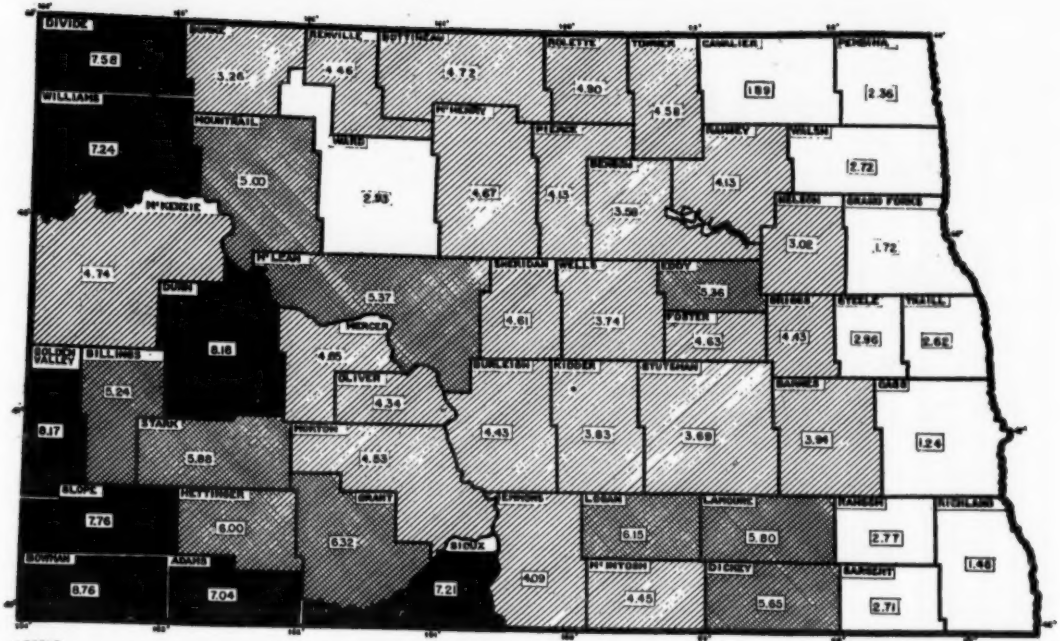
The support given the hail-insurance program throughout the state is presented in Table 5 and Table 8, following in the discussion of the relation of private and public hail insurance. First to be observed, in Table 5, is the fact that the total insured acreage fell rapidly from 1919 to 1924, leveled off during the four-district zoning system between 1925 and 1931, and dropped still more with the adoption of the voluntary system in 1932. The same trend in dollars is shown in Table 8. Column 3 of Table 5

reveals that the percentage of insured acreage to cropped acreage fell from 67 in 1919 to around 35 in 1925–30, and dropped to 6 per cent in 1933. The drought years of 1934 and 1936 are not representative. Column 4 of Table 5 suggests that the percentage of State Hail Insurance to total state and private insurance did not vary materially; one concludes, therefore, that the amount of private insurance declined proportionally with the state.[28]

Assuming as a basis for departure the four-district zoning system established in 1925, we have used this classification in constructing Chart III covering a fifteen-year period of experience comparing the dollar loss per county for each $100 of insurance risk. Each county is placed in one of the four classifications. Each figure is a fifteen-year loss compared to a fifteen-year risk, thus eliminating annual divergencies.

Of the 53 counties in the state during this 15-year period, 11 had less than a 3 per cent loss; 24 had more than 3 and less than 5 per cent loss; 10 had more than 5 and less than 7 per cent loss; and 8 counties had more than a 7 per cent loss. The lowest average percentage of loss to risk for the entire period was in Cass County (1.24 per cent); the highest percentage of loss to risk was in Bowman County (8.76 per cent). Thirteen valley counties have an average loss to risk for the 15-year period of 2.58 per cent; 13 counties on the western border have an average loss to risk of 6.53 per cent. Recalling that under the zoning system of 1925, claimants in District I paid an indemnity tax which was five-sevenths that of those in District III, one can see why by 1930 the 13 valley counties carried only 13.2 per cent of their cropped acreage in state insurance, whereas the 13 western counties still carried 34.1 per cent. The reader is aware that all insurance was a contract between individual parties and the State Hail Insurance Department; the counties were used as an area to classify the risks. When we have spoken of a certain county as having a certain percentage of loss to risk we mean, therefore, the total losses of all the claimants to all the insured risks within that county.

[28] A discussion of this condition follows in Part IV of this article.



LEGEND.

- 0-2.9
- 3-4.9
- 5-6.9
- OVER 7

NORTH DAKOTA STATE HAIL INSURANCE
AVERAGE LOSS PER $100 RISK, 1919-1933
CHART III

SOURCE:
AVERAGED FROM ANNUAL RPTS.
HAIL INS. DEPT., 1919-1933
STATE AVERAGE 4.82

A serious factor in the operation of the State Hail Insurance was the decision by the North Dakota Supreme Court in 1925 that the indemnity tax levied by the commissioner of insurance to meet the hail claims was not a legal tax in the sense of having a prior lien over antecedent mortgages. This decision was so important that it is believed desirable to quote it at length:

> The indemnity hail tax is not an enforced or compulsory contribution, levied by the state by virtue of its sovereignty. It does not owe its existence to any positive act of the government. According to the statutes land may be rendered subject to the indemnity tax in three ways: (1) where it is listed by the assessor and not withdrawn by the owner . . . . ; (2) where (the assessor having failed to list it) it is listed by the owner or tenant or their agents . . . . and (3) where the owner, occupant, or tenant makes application for an additional indemnity of $3.00 per acre. . . . . Whether any tract of land is or is not subject to such tax depends upon the facts in the case. Unless the land is listed, there is no indemnity against loss by hail and no liability for the indemnity tax. *Bossen* v. *Olsness* 48 N.D. 68, 182 N.W. 1013. Every tract of land in the state may be withdrawn from the operation of that act and relieved from the indemnity tax, and no tract becomes subject to the tax unless the owner thereof (or, if the tract is leased, the owner and tenant) impliedly consents that it may become subject thereto. The Hail Insurance Act does not apply automatically, either to all growing crops, or to all tracts of land on which crops are grown subject to the indemnity tax. But it is the prime duty of the owner of the land or the tenant, or the agent of either, in order to effect hail insurance upon the crops grown upon such land, to make the affidavit or affidavits provided for in section 11. *Brown* v. *Nelson et al* (N.D.) 197 N.W. 223.
>
> . . . . in every case it is within the power of some private individual or individuals to determine whether the indemnity tax shall or shall not be levied against a particular piece of land. The indemnity tax rests, in each instance, not upon the legislative will, but upon the will of the private individuals. . . . . If in any year the owners of all the lands in the state and their tenants should elect to withdraw the lands from the operation of the Hail Insurance Act by filing proper affidavits of withdrawal, not one cent of indemnity tax would be levied. It seems only too clear for controversy that the indemnity tax is *not* a tax within the well settled and fundamental meaning of the term. It does not rest upon some positive act of the government, but upon the consent of private individuals. In short, the indemnity tax is devoid of the fundamental attributes of a tax.
>
> If this obligation is a tax in the proper sense, then the state may give it the priority of a lien. If not a tax, then the legislature cannot, by designating it a tax, give it any greater preference as a lien than would be given it had

no such name been affixed to it. To postpone a legal existing lien upon real property to a subsequent lien by a statute enacted subsequently to the attaching of such prior lien is to impair the obligation of contract. The object cannot be accomplished by indirectly calling something a tax which is not a tax. The legislature could not by an act passed after the plaintiff's mortgage had been executed and become a lien upon the property, confer upon any other person who should loan or advance money or money's worth to the mortgagor, a lien upon such property prior to that of the existing mortgage. Nor can the legislature lawfully give to a county or any other public corporation or subdivision of the state any such priority in such a case unless the claim for a tax as a tax is known to the law. Neither can the state itself secure any such priority under such circumstance. When entering into contracts with individuals the state or the municipal corporation thereof is to be treated the same as an individual. It cannot call or charge up the amount of the loan as a tax, and by that device confer upon the loan all the qualities of a tax. If it could, and in this manner insert a lien for this pseudo tax ahead of existing liens, the holder of the security upon real estate would be at the mercy of the state, despite the supreme law of the land preventing the repairing of obligations of contract by any state. *Walker* v. *Whitehead* 16 Wall 314.[29]

Three fiscal effects resulted from the above decision declaring existing mortgages not junior to the indemnity tax levied by the commissioner. First, in conformity to the amended law, the Hail Insurance Department had to refund during the next seven years, $104,213.18 to holders of certificates of the indemnity tax who had foreclosed on the property by the payment of the tax and who had lost the property after the mortgagee regained his priority by this decision.[30] Second, the Hail Insurance Department had to refund, up to December 31, 1932, $262,632.42 to mortgagees who had paid under compulsion prior to July 1, 1926, the indemnity taxes in connection with the general property tax.[31] Third, the Department "lost" revenue during the remaining period that the compulsory law was in effect amounting to $660,-243.30, representing unpaid indemnity taxes by mortgagees who nevertheless paid their general property taxes.[32]

The decline in the collection of the indemnity tax after the

[29] *Davis* v. *McLean County*, 52 N.D. 857, 204 N.W. 459 (1925).

[30] Commissioner of Insurance, *Annual Report of Hail Insurance Department, 1932*, p. 26.

[31] *Ibid.*, p. 27. [32] *Ibid., 1931*, p. 27.

decision in 1925 is indicated also by Table 6, presenting the amount and the percentage of delinquency of both the flat tax and the indemnity tax during the compulsory period. Up to the year 1925 both levies had delinquencies which were within the 1 per cent reserve for uncollected taxes; after 1925, the delinquency for the indemnity levy jumped to about 3 per cent for the years 1925, 1926, and 1928, and rose to 7 and 16 per cent

TABLE 6*

AMOUNT OF LEVY AND DELINQUENCY OF NORTH DAKOTA STATE HAIL INSURANCE TAXES

Year of Levy	Flat Tax	Delinquency, March 1, 1933	Per Cent	Indemnity Levy	Delinquency, March 1, 1933	Per Cent	Mill-Tax Delinquency†
1919.....	(Added to indemnity levy)			$3,959,000	$ 32,000	0.80	.....
1920.....	(Added to indemnity levy)			3,848,000	28,000	0.72	.....
1921.....	$829,000	$7,000	0.84	5,138,000	50,000	0.97	.....
1922.....	816,000	5,000	0.61	3,943,000	47,000	1.19	2.35
1923.....	273,000	1,000	0.36	3,953,000	47,000	1.18	1.85
1924.....	270,000	2,000	0.73	1,826,000	24,000	1.31	1.84
1925	270,000	2,000	0.73	1,668,000	61,000	3.63	1.73
1926.....	277,000	3,000	1.11	2,016,000	77,000	3.59	1.63
1927.....	267,000	4,000	1.49	3,485,000	155,000	4.43	2.34
1928.....	No levy	.....	.....	3,985,000	293,000	7.32	2.58
1929.....	No levy	.....	.....	1,544,000	258,000	16.65	5.83
1930.....	No levy	.....	.....	2,063,000	745,000	35.80	13.29
1931.....	No levy	.....	.....	1,213,000	868,000	71.20	26.16

* Board of Auditors, *Annual Report of Hail Insurance Department for the Year Ending March 31, 1933*, p. 30.

† This column lists the percentage of delinquency of a special property tax levy for the North Dakota State Mill and Elevator. It is used to compare the delinquency of the hail insurance levies. The Mill delinquency is for June 30, 1933, instead of March 1, 1933. The Mill delinquencies were calculated from data in the office of state auditor.

for the years 1928 and 1929, respectively. The large delinquency for 1930 and 1931 must be discounted because the collections for the year 1933 had not been made at the time of the report of the auditor. As a comparison, the delinquencies for another special property tax, the North Dakota Mill and Elevator levy, is placed in the final column of Table 6. This levy has the status of a legal tax. It is evident that the delinquency on the indemnity tax is twice or more that of the Mill and Elevator levy after the decision of the Supreme Court in 1925, declaring the indemnity tax not to be a *tax*.

A very capable summary of the then existing situation was given by the commissioner of insurance in one of his annual reports:

> For reason of non-payment of such taxes the Department is losing thousands of dollars every year as premiums, and as a consequence such losses must be included in the Hail Indemnity Tax Levies as uncollectible taxes or reserves for refunds and abatements, thereby increasing the Hail Indemnity Tax charge to those who actually pay their taxes. . . . . It is a practice that must be stopped somehow. If the mortgagee cannot be persuaded to pay all the taxes including the Hail Indemnity Tax, the mortgagor must be made to to pay them. Persuasion ordinarily does not work unless there is a whip or penalty connected therewith, and it is earnestly proposed that enough teeth be put into the Hail Law to give the management of the Department power to refuse to carry the protection on such lands where it is found that Hail taxes are in arrears for more than one year. Records show that some of those who are supposedly staunch supporters of the Department allow delinquent Hail Taxes to remain on the records year after year, accepting free protection at the cost of the other fellow. If there is a loss, payment of indemnity is made by the department; if there is no loss no premium is paid. This certainly is a very Utopian condition from the individual party's standpoint, but in business it doesn't work. Imagine a private insurance company being compelled to operate under such conditions. There is no need to elaborate on the matter for it is naturally evident that the company would be compelled to liquidate after the first season. We must look to the legislature to remedy this condition in the very near future.[33]

From the foregoing quotation and from reference to Table 2, it is evident that a considerable amount of hail indemnity taxes were not paid at all by the claimant but were merely subtracted from the indemnity claim when the applicant suffered a loss. Had not the law allowed the payment of a hail premium by an offset out of the hail loss, the delinquency of the indemnity tax would have been close to 30 per cent. With this serious growth in delinquency and with the wide use of the withdrawal privilege in the eastern counties especially, the compulsory system lost its attractiveness.

III. VOLUNTARY HAIL INSURANCE RE-ESTABLISHED 1932 TO THE PRESENT

The third phase of the North Dakota Hail Insurance program began with the re-establishment, effective for the crop year 1932,

[33] *Ibid.*, *1928*, pp. 11–12.

of a voluntary listing system without any withdrawal privileges except for partial or total destruction of crop by natural injury other than hail and with the indemnity assessment placed on a contractual basis between the party and the state.[34] The essential features of the new law were well summarized in the report of the Commissioner:

1. *Insurance must be applied for.*—Applications will be written by the assessor until the last Monday in June and by the County Auditor until August 1st. The original application may call for either $7.00 or $10.00 per acre coverage.

2. *Insurance may be carried only on the following crops.*—Rye, wheat, speltz, oats, flax, corn, buckwheat, millet, sweet clover, alfalfa, and cane. Insurance is effective on winter wheat and winter rye from noon, June 1st to noon, September 1st; and on flax and corn from noon, June 10th to noon, September 15th; and on all other crops from noon, June 10th to noon, September 10th.

3. *Renters must secure the consent of the landlord.*—Any tenant desiring to make application for insurance must have a letter or written statement from the landlord authorizing him to apply for protection. Such written application must be handed to the assessor at the time the application is written up.

4. *Hail tax may be paid separately.*—The hail tax may now be paid to the County Treasurer at any time without paying the real estate taxes. Hail taxes must be paid or an application for insurance will not be approved.

5. *Insurance may be cancelled in case of drought* . . . . in case any crop is a total or partial failure from any agency other than hail, the insured may, on or before the 6th day of July, cancel his insurance by filing proper notice with the Hail Insurance Department. In such event the earned premium on the different crops shall be the percentage of the annual premium as follows: Rye or winter wheat, 60%; Barley and oats, 50%; Wheat, speltz, buckwheat or flax, 40%; Corn and other crops, 30%.

6. *Special policies.*—Nontaxable lands may be insured by special application and payment of the premium in advance. . . . . The cash premium rate is 70¢ per acre for $7.00 protection and a refund will be made in the fall for the difference between such cash payment and the actual rate when determined.

7. *Five districts.*—The addition of a fifth district will provide for very cheap insurance in counties with a low loss ratio. Protection from hail may now be had at a cost that is in direct ratio to the risk involved.[35]

[34] The amendment of 1931 became effective after the starting of the crop year and the operation of the law was postponed by ruling of the attorney-general.

[35] Commissioner of Insurance, *Annual Report of the Hail Insurance Department, 1931*, p. 9.

In 1933 several amendments to the new voluntary law were passed: (1) the hail tax was made a prior lien to any other lien executed after the passage of the amendment; (2) an application was allowed if only one of the last three years of the indemnity tax was unpaid; (3) the coverage was reduced from seven and ten dollars to five and eight dollars per acre; (4) claimants objecting to the original adjustment had to post a deposit of $25 to cover expenses of the Board of Arbitration.[36]

TABLE 7*

INDEMNITY RATES LEVIED DURING THE SECOND VOLUNTARY PERIOD, 1932–36†

YEAR	DISTRICT I LOSS RISK UNDER 1 PER CENT; INDEMNITY RATIO, 3		DISTRICT II LOSS RISK OVER 1 PER CENT, UNDER 3 PER CENT; INDEMNITY RATIO, 5		DISTRICT III LOSS RISK OVER 3 PER CENT, UNDER 5 PER CENT; INDEMNITY RATIO, 6		DISTRICT IV LOSS RISK OVER 5 PER CENT, UNDER 7 PER CENT; INDEMNITY RATIO, 7		DISTRICT V LOSS RISK OVER 7 PER CENT; INDEMNITY RATIO, 8	
	Rate	No. of Counties	Rate	No. of Counties	Rate	No. of Counties	Rate	No. of Counties	Rate	No. of Counties
1932	$0.19	12	$0.32	12	$0.38	12	$0.45	8	$0.51	9
1933	.09	19	.15	13	.18	10	.21	6	.24	5
1934	.06	26	.10	12	.12	6	.14	3	.16	6
1935	.18	2	.31	7	.37	10	.43	5	.50	29
1936	0.18	28	0.31	12	0.37	4	0.43	1	0.50	6

* Commissioner of Insurance, *Annual Report of the Hail Insurance Department, 1932–1936.*
† Rates for 1932 are given for the $7.00 risk; for 1933–36 for the $5.00 risk.

It is believed that the above description of the new law is self-explanatory, except the item Number 7 concerning the creation of a new district. The matter has been mentioned before and Table 7 indicates the nature of the district, the basis for the indemnity ratio, the actual rates levied for the years 1932–36, and the number of counties affected. It is patterned after Table 4, which covered similar data for the earlier period of 1925–31. District I is now a new district composed of those counties with a loss ratio to risk of less than 1 per cent. The indemnity proportion for this district is 3.

To appreciate the operation of the state insurance during the

[36] *Laws of North Dakota, 1933*, c. 137.

second voluntary phase, certain conditioning factors must be known: first the years of 1934 and 1936 were exceptional in that drought burnt out nearly all the western part of the state and even part of the valley; second, the year 1935 was unusual in that Governor Walter Welford, by proclamation, suspended the operation of the provisions (*a*) prohibiting applications where more than one of the past three years showed unpaid hail taxes and (*b*) requesting an advance deposit for special policies on non-taxable lands. Because of these factors the year 1933 has been considered as most typical of this phase. For this selected year, 1933, the percentage of insured acres to cropped acres dropped much below the percentage for 1930 as indicated by the bottom figure in Chart II, and the state average in Table 5, both of which were presented earlier in this paper. The same 13 valley counties which carried 13.2 per cent of cropped acreage in hail insurance in 1930 had reduced this percentage to 2.7 by 1933; the 13 western counties had lowered insured acreage from 34.1 per cent in 1930 to 13.8 per cent in 1933. To point out the severe decline in the use of the State Hail Insurance System, the state averages of insured acreage to cropped acreage are again repeated: 1919, 67 per cent; 1924, 30 per cent; 1930, 34 per cent; and 1933, 6 per cent.

From the standpoint of operating and adjusting costs, the drastic decline in the use of the state insurance raised the percentage of total operating cost to indemnity levy and the cost of adjustment per claim. The data presenting these conditions for the five-year period of 1932–36 were included in Table 3. Discounting the drought years of 1934 and 1936, we find that the representative year of 1933 has a cost per claim that is twice the average in the compulsory period and has a percentage of operating cost to indemnity levy which is three times the maximum of the compulsory period.

To obtain a final appraisal of the success of the system, we quote the concluding remarks of Mr. S. A. Olsness, who had been commissioner of insurance from 1918 to 1934. In his last report he states:

> Comparatively, we believe that the scheme of State Hail Insurance has operated successfully, furnishing protection at practically half of what it

would have cost in private companies, until the supreme court decision in 1925 decreed that the state hail tax premium was inferior to prior mortgages. With the increasingly adverse farm conditions the farmers couldn't meet their taxes and the mortgagees, relieved by the court decision, wouldn't pay the delinquent taxes; the consequence was that the Hail Fund had to furnish free insurance—being unable to collect premiums except when loss occurred—year after year, resulting in hundreds of thousands of dollars of loss to the fund. Instead of a four million dollar fund permitted by law, nearly half of that was outstanding as uncollected (and uncollectible) taxes. Clearly this was an impossible situation and something had to be done about it.

The legislature of 1931, after a series of conferences in the insurance committee and caucuses, with the assistance of the Insurance Department, decided to drop the compulsory listing feature of the law and make insurance available only on the condition that all previous delinquent hail taxes had been paid up. That this resulted almost fatally to the business is shown by the decline in volume from an average of six million acres to one million. In order to avert further decline and if possible revive the business to its former status, the 1933 legislature liberalized the requirement with reference to payments of previous unpaid taxes; but the extreme drought, and continued unfavorable farm conditions of that year failed to do what was hoped for. The volume insured in 1933 was about the same as the year before. These are the sad, but true, facts. . . . .[37]

Adding to the comments of Mr. Olsness, it would appear that, owing to the unusual farm conditions during the period 1932–36, the voluntary system has not had an entirely fair period in which to operate as compared with the first five years of the compulsory phase from 1919–23. Therefore, to prove or disprove the superiority of the two types, a longer, more normal environment (if such exists) is necessary.

IV. COMPARISON OF PUBLIC AND PRIVATE HAIL INSURANCE IN NORTH DAKOTA

Having completed a partial study of the three phases of the North Dakota State Hail Insurance System, the problem remains to cover briefly the comparative success of the state system in providing a cheaper insurance than did the private companies. The basic material is the comparative risks, the premiums levied, and the losses allowed, which is presented in Table 8.

[37] Commissioner of Insurance, *Annual Report of the Hail Insurance Department, 1934*, p. 2 (typewritten report only).

Some of the conclusions evident from a study of Table 8 have been mentioned earlier in this paper: first, the private coverage was much greater than the state coverage during the first voluntary period of 1911–18; second, the state coverage was correspondingly greater than the private coverage during the compulsory phase of 1919–31; third, both the private and the state hail risks decreased during the compulsory phase; fourth, both types vanished to almost negligible amounts during the trying period of 1932–36. This table seems to reassert that the second voluntary period was such an unusual period that it is unwise to generalize from it too much. If economic conditions were the same in 1911–18 as in 1932–36, one would expect that the total hail insurance would be the same. Yet as Table 8 shows, an average of total hail risks was about $25,000,000 in the first voluntary period as against an average of only $10,000,000 in the latter voluntary period. The percentage of state risks to total state and private risks has been discussed earlier and traced above in Table 5.

From the basic material presented in Table 8, there has been calculated the percentages of premium to risk and of losses allowed to risk for both the state and the private insurance. These results are summarized in Table 9. The private rates during the 1911–18 phase were twice the state rates and the rates were about 20 per cent more than the losses allowed. Also, throughout the compulsory phase, the private rates continued to be considerably higher than the state rates. Nevertheless, the private companies had about the same percentage of loss allowed to risk carried as did the state.

The detailed difference between the private and the state premium rates and losses allowed may be stated somewhat otherwise: In the 1911–18 period, the private rates were 19.23 per cent more that the losses allowed; the state rates were only 3.89 per cent more than the losses paid, but because of the losses being prorated, they were only 56.72 per cent of the losses allowed. In the 1919–31 phase, the private premium rates were 69.67 per cent more than the losses allowed, whereas the state premiums were only 3.97 per cent more than the losses allowed. In this second phase all state claims were paid in full. In the last period,

1932–36, the private premiums were 46.80 per cent more than the losses allowed, but the state rates were only 4.04 per cent more. In all these percentages, as explained before, the premium rates and the losses allowed are divided by the total hail risk covered

TABLE 8*

DATA ON PRIVATE AND STATE HAIL INSURANCE IN NORTH DAKOTA, 1911–36

YEAR	RISKS		PREMIUMS		LOSSES ALLOWED	
	Private	State	Private	State	Private	State
1911...	$17,579,178	No data	$1,133,784	$ 26,109	$ 720,275	$ 30,729
1912...	21,195,146	No data	1,443,770	64,850	1,117,465	105,339
1913...	15,986,944	$ 722,975	1,079,813	27,214	500,109	28,284
1914...	24,947,927	749,203	1,361,265	27,772	1,201,929	38,439
1915...	37,061,875	554,104	2,418,432	20,853	1,660,299	24,935
1916...	30,148,681	883,023	2,142,785	33,113	3,035,412	79,372
1917...	16,313,157	318,792	1,280,068	11,954	677,293	16,654
1918...	36,097,912	511,382	2,696,697	19,910	2,683,720	33,121
1919...	12,744,426	86,858,457	1,282,897	3,105,635	588,599	3,489,240
1920...	20,271,060	84,376,197	1,994,424	3,018,389	1,233,241	3,348,298
1921...	10,678,228	81,737,655	1,055,343	5,208,612	880,806	4,773,270
1922...	8,767,349	65,730,507	824,526	3,972,215	457,208	3,537,555
1923...	5,168,239	55,386,881	397,030	3,954,729	358,531	4,491,448
1924...	6,840,757	38,786,143	511,805	1,827,409	314,491	1,533,486
1925...	10,520,647	45,255,245	880,899	1,668,369	396,313	1,367,293
1926...	5,243,889	43,471,349	389,258	2,015,501	175,608	1,697,082
1927...	12,962,220	55,583,460	931,424	3,485,325	506,876	3,274,560
1928...	13,188,861	47,486,875	959,981	3,983,381	797,429	3,730,069
1929...	9,232,531	41,838,827	606,174	1,542,512	192,019	1,555,064
1930...	8,887,512	46,227,652	526,808	2,064,679	225,182	1,877,571
1931...	3,604,556	28,790,008	84,610	1,213,753	30,018	970,323
1932...	2,477,620	8,701,704	114,906	474,229	57,541	410,506
1933...	No data	7,130,858	No data	216,645	No data	218,466
1934...	431,581	993,884	16,187	19,520	2,578	25,649
1935...	3,494,707	33,830,887	189,789	2,910,634	188,643	2,862,672
1936...	1,285,450	1,215,144	53,683	464,814	6,394	25,134

* Commissioner of Insurance, *Biennial Reports, 1911–1918; Annual Reports, 1919–1936; Annual Reports of the Hail Insurance Department, 1919–1936.*

by each type. The averages in this paragraph are calculated by first adding the dollar figures for the desired period and then obtaining a percentage; the yearly figures in Table 9 are obtained by comparing the annual data.

These figures indicate that even with the competition of state

insurance, the private rates, relative to the losses incurred, were considerably higher than the state rates. In other words, the state operated on a much closer margin. Under such conditions why did any private insurance continue at all? The answer must lie

TABLE 9*

PERCENTAGE OF PREMIUM RATES AND LOSSES ALLOWED TO HAIL INSURANCE RISKS, NORTH DAKOTA

Year	Private Hail Insurance		State Hail Insurance	
	Premium Rate	Losses Allowed	Premium Rate	Losses Allowed
1911	6.45	4.10	No risk data	
1912	6.81	5.27	No risk data	
1913	6.74	3.13	3.76	3.91
1914	6.74	4.82	3.71	5.13
1915	6.53	4.48	3.76	4.58
1916	7.11	10.07	3.75	9.53
1917	7.85	4.15	3.75	5.22
1918	7.48	7.43	3.89	6.48
1919	10.06	4.69	3.58	4.02
1920	9.83	6.08	3.58	3.97
1921	9.88	8.25	6.37	5.84
1922	9.40	5.21	6.04	5.38
1923	7.68	6.94	7.14	8.11
1924	7.48	4.60	4.71	3.96
1925	8.37	3.77	3.89	3.02
1926	4.72	3.35	4.64	3.90
1927	7.18	3.91	6.27	5.89
1928	7.28	6.05	8.39	7.85
1929	6.57	2.07	3.69	3.72
1930	5.93	2.53	4.47	4.06
1931	1.34	0.83	4.42	3.37
1932	4.69	2.33	5.45	4.72
1933	No data in report		3.04	3.05
1934	3.75	0.60	1.94	2.55
1935	5.43	5.49	8.60	8.46
1936	4.17	0.49	5.33	2.07

* See Table 8.

in the concentration of the private companies in the valley region where the probabilities of hail losses, as shown in Chart III, were only one-fourth as great as in the extreme western part of the state. On the other hand, as also indicated in that chart, the state losses in the west were much higher. Yet the greater cover-

age in this western area without a charge proportionate to the losses materially favored this section.

Attention must now be given to a table recurring in each report of the Hail Insurance Department, entitled "State Hail Insurance versus Private Insurance Companies." This table presented data to prove that the private rates being twice as high as the state rates, the state system had "saved" the state of North Dakota, or its people, a sum equal to the cost of the state program. To illustrate, the 1931 report states that over the then thirteen-year period since the adoption of the compulsory law in 1919, the state had insured $721,511,248 of hail risk at a premium cost of $36,906,517, which would have cost $73,707,613 under a private-rate structure, and thus the state had saved the applicants $36,810,086. During the five-year voluntary period of 1932–36, $51,839,413 of risks were taken at a premium cost of $3,685,821, which would have been $4,124,995 under private-premium rates thus saving $439,174.[38] The fundamental assumption under which these savings are made is that the private companies would have insured the same acreage as did the state. To obtain the total private cost (premium charge) the Department multiplied the private rate in each county by the state acreage in that county. One may inquire whether this method is economically sound; it would seem that if the elasticity of private rates be considered, the private companies would not have been able to secure the state acreage with their higher rates. Certainly, the private companies would have had difficulty in obtaining the same acreage in the western counties as did the state with a private rate over twice as high. Neither would the private companies insure the applicants from year to year by carrying his premiums as an accrued income. It does not seem logical to ascribe to the private companies a theoretical premium total which they would not have been able to collect because the high rates they would have charged would have prevented the coverage from being written.

[38] Commissioner of Insurance, *Annual Report of the Hail Insurance Department, 1931*, p. 40; *ibid., 1936*, p. 12.

Two evident conclusions do appear from a study of the state and private systems: First, the state rates were lower than the private rates by at least 50 per cent in the high-cost counties; second, these high-cost counties with the greater percentage of loss to risk (see Chart III) certainly saved, in the sense that they used a state fund in which the premium charge was considerably less than the loss allowed. It would seem, to the author at least, that this saving is at the expense of the low-cost counties with the discriminatory rate rather than the private companies. Again, it is wise to note that by county costs, of course, one means the cost to the individual applicants in those counties. It is quite possible that the lowering of the private rates from 10 to 6 per cent may be due largely to the competition of the state system; one would not say that the applicants gained materially unless the gross profit of the private companies declined. Yet, as mentioned earlier, the gross profit of the private companies increased after the establishment of the state hail system. Under these conditions, the valley counties with a low loss by hail (see Chart III) were in an unpleasant dilemma: on the one hand, the private companies, even with state competition, charged here a rate sufficient to bring in a gross profit 60 per cent over the losses allowed; and on the other hand, the state system had to charge a rate in these counties as much as twice the loss allowed (see Charts I and III, and Tables 4 and 7), in order to meet the more severe losses in other parts of the state. One has difficulty in comparing a theoretical gain from the reduction of private rates to the theoretical loss in carrying the high-risk counties. In summary, there is no question but that the applicants living in counties with losses over 7 per cent of risks saved by having the lower-cost applicants pay a higher premium, relatively. Whether the entire state can be said to have saved the amount of thirty-six million dollars is still another matter.

BOOK REVIEWS

The Chain Store Problem. By T. N. Beckman and H. C. Nolen. New York: McGraw-Hill, 1938. Pp. viii+350. $3.50.

The Chain Store Problem, according to the authors, Professors Beckman and Nolen, is an attempt "to present in an unbiased and strictly impartial manner the historical development of chains, their present status, their manifold contributions to business technique, economic progress, and consumer welfare, as well as the deep disturbances caused by them in our business, economic and social systems." The volume falls logically into three parts: the first giving the history, advantages, and disadvantages of chains; the second, a study of price and service differentials of chains and independents; and the third, a treatment of the economic and social effects of chains.

Since much of the argument concerning the effects of chain stores is based upon studies of price differentials between chain and independent stores, it is well to point out some of the limitations of such investigations. In the first place, the items chosen for comparison are necessarily those for which consumers are price-conscious, and therefore many of them are generally used as loss leaders, particularly by chains; second, the sizes of stores from which prices are collected are seldom comparable, the chains being generally larger; third, the difference in location between chains and independents precludes the determination of differentials between them per se. Although the authors recognize these limitations, they come to the conclusion that "there can be little doubt that chain stores substantially undersell their independent competitors" (p. 136).

In an elaborate study of grocery prices in Florida made by one of the authors, quotations were obtained and tabulated for 124 standard items in 265 independent and in 268 chain stores. The data on chain units were tabulated according to the number of stores operated per chain in the state of Florida. The results show that chains which operated two or three units within the state would save the purchaser of these items 3.18 per cent of the amount he would have spent at an independent store. The savings grew progressively larger as the num-

ber of stores operated within the state increased. Thus chains operating 7 to 10 stores saved 3.31 per cent; those operating 11 to 15 stores, 3.93 per cent; and those operating over 16 stores, 4.56 per cent. The authors state that "the results of this study are rather startling but not wholly unexpected by students of chain store merchandising." The reviewer agrees with the first part of this statement. There has been some evidence to indicate that the larger chains tend to undersell both independents and smaller chains, but the finding that chains decrease prices as they increase the number of units within a particular state is indeed startling and needs further confirmation. Unfortunately the causes and implication of this rare consistency between price differentials and number of stores within the state are conspicuously absent in the treatise, although considerable attention is devoted to the causes of underselling by the chains.

Chain-store taxation, which is the crux of the chain-store problem, is discussed at length. Although attacking the courts for basing their decisions upholding discriminatory tax laws on flimsy and incomplete evidence of difference between chains and independents, the authors seem to straddle the question in their conclusions (1) that some of the tax will be passed on to the consumer and some of it absorbed by the chains, (2) that license-tax laws with brackets up to 10 or 15 stores are sounder than those using larger brackets, and (3) that chains will not be placed at a material disadvantage unless the taxes cause them to raise their prices extensively (p. 264). They fail to point out what would seem to be the logical conclusion of their arguments, that, assuming chains to be efficient and competitive as they repeatedly demonstrate throughout the book, a discriminatory tax against them will reduce competition so that consumers in the long run not only will pay the tax at the chain store but also will pay many times the tax in the higher prices charged by less efficient independents. This, in fact, is often the thinly disguised purpose of such laws.

Notwithstanding the weaknesses in logic such as have been pointed out above, the book presents the most comprehensive and careful treatment of the subject yet available. The fluent style and logical organization should make it easy and informative reading, while the careful documentation will make it a useful reference work.

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Problems in Agricultural Marketing. By DEAN W. MALOTT. New York: McGraw-Hill Book Co., Inc., 1938. Pp. ix+410. $3.00.

This publication is one of the series of Harvard problem books. In the language of the Preface, it is intended "to present concrete material for analyzing the problems faced by those engaged in the various phases of agricultural marketing." There is no discussion of the problems. "Questions at the end of each case present a possible focus of analysis and discussion looking toward the formulation of sound marketing principles."

Classification of the problems in the chapter outline is partly on an institutional basis, partly on a functional basis. The problems themselves are important and typical, and of sufficient variety to give a review of the major aspects of agricultural marketing. Not sufficient attention is given to the function of communication in relation to the operation of the central markets and organized exchanges. In view of recent developments, also, the final section dealing with national problems of agricultural policy seems inadequate.

In the hands of a well-informed instructor this text should be highly provocative of discussion of the pros and cons of possible executive action and should stimulate further reading. Many of the problems are so complex that solutions in any final sense cannot be expected on the basis of such evidence as the text is able to give. See, for example, the problem of the Wright and Faulkner Company involving the policy of direct buying of hogs.

A scanning of the problems contained in the book leaves one with the impression that the derivation of a set of "sound marketing principles" for agriculture by this or any other route is a tough assignment. What one finds is a series of highly differentiated markets, each with its own customs and practices. Policies, when they are not determined by associative or governmental action, seem largely opportunistic. But here is matter for debate which had best be left to the users of the text.

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